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# Municipal Solid Waste Needs Assessment. Final Report

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This final report examines the needs (technical, educational, and policy) of municipal solid waste managers in Alaska, Washington, Oregon, and Idaho. Four state profiles of solid waste management (and one profile for Indian tribes) indicate the variety of needs across the region. Washington and Oregon needs are concentrated in finding markets for recyclable materials, while Idaho and Alaska need more basic technical assistance in siting and building landfills, handling wastes in remote rural villages, and in beginning to promote recycling within the states. The report presents recommendations to the EPA Region 10 office on ways in which it can assist the states. Emphasis is on market development, basic technical assistance, interstate issues, education and outreach, and research needs. The report is based on over a hundred interviews with states regulators, legislators, local waste managers, governmental and tribal associations, non-profit groups, and waste/recycling industries.

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# Municipal Solid Waste Needs Assessment

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## Final Report

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Throughout the course of this project, we have kept the state environmental agencies aware of our efforts, and have solicited their comments on various draft materials. We interviewed Dennis Kelso, Commissioner of the Alaska Department of Environmental Conservation; Joe Nagel, Administrator of the Idaho Division of Environmental Quality; Fred Hansen, Director of the Oregon Department of Environmental Quality; and, Christine Gregoire, Director of the Washington Department of Ecology, as well as those members of their staffs working in the area of solid waste management, listed below. Their cooperation with this project has been crucial to its success, and we are hopeful that they, as well as EPA, find the results useful.

This project would not have been possible without the cooperation of those people whom we interviewed. A list of our interviewees from each state is found at the end of each state profile. We very much appreciate the time they contributed to the project including the time spent by those who provided written or oral comments on the draft profiles. One of the major assets of the Pacific Northwest, as it copes with its changing solid waste environment, is the quality of leadership it possesses in all aspects of solid waste management.

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## EPA REGION 10

## MUNICIPAL SOLID WASTE NEEDS ASSESSMENT

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# I. INTRODUCTION

> *. . . When we got there, there was a sign and a chain across the dump saying, "Closed on Thanksgiving." We had never heard of a dump closed on Thanksgiving before and with tears in our eyes, we drove off into the sunset looking for another place to put the garbage.*
>
> *We didn't find one . . . 'til we came to a side road. And off the side of the road was a fifteen-foot cliff, and at the bottom of the cliff was a pile of garbage. We decided that one big pile was better than two little piles - and rather than bring that one up, we decided to throw ours down.*
>
> *And that's what we did.*
>
> *Arlo Guthrie*
> *Alice's Restaurant*

Transforming this country from a "throw-away society" to one which is concerned with waste reduction, recycling and environmentally-sound municipal solid waste[1] management will require the full effort and commitment of the citizens of this country, and will require sound leadership and farsighted planning on the part of its cities, counties, states, Indian Tribes, and the federal government.

EPA Region 10, the regional office of the Environmental Protection Agency serving the needs of Alaska, Idaho, Oregon and Washington, recognizes that despite heightened Congressional interest in municipal solid waste (MSW) issues and the growing federal regulatory role in this area, solid waste management is - and will likely remain - a local issue. As it starts to develop its programs, policies and priorities for helping the various Pacific Northwest jurisdictions cope with the rapid changes underway in solid waste management, EPA Region 10 saw the need to increase its understanding of the concerns facing the industry and solid waste managers at the local and state level. To that end, Ross & Associates, under a subcontract to Science Applications International Corporation (SAIC), was asked to report on the emerging issues in the Pacific Northwest states. Further, Ross & Associates was asked to identify areas of concern where some type of EPA involvement might be useful. This report is the outcome of that request. It contains nine additional sections:

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[1] All references to solid waste in this report refer to municipal solid waste unless explicitly stated otherwise.

- an overview of the generic changes underway across the country in solid waste management (Section II);
- a brief commentary on how this project was structured (Section III);
- our observations concerning the region as a whole (Section IV);
- recommendations of areas where EPA Region 10 might appropriately respond to concerns in the Pacific Northwest (Section V); and,
- a profile of each state in the region, as well as a separate discussion of solid waste concerns on Indian tribal lands (Sections VI-X).

## II. NEW ERA IN MUNICIPAL SOLID WASTE MANAGEMENT

"Taking out the garbage" has never been high on anyone's list of household chores. Neither has it, in the past, been very high on the list of municipal chores facing local jurisdictions. Rather, finding a way to dispose of "solid waste" - the technical name for garbage - has been seen by all concerned as a necessary nuisance. In economic terms, solid waste has been considered a low-value, high-bulk "homogeneous" commodity, destined for disposal in the nearby landfill. The cash cost of disposal was low because no one anticipated the environmental consequences, or the cost of preventing them, associated with these solid waste management practices.

A number of factors have been accumulating over the last two decades which are forcing us to change dramatically our view of solid waste. The "disposable" ethic which has permeated society and the growth of product packaging are causing each of us to produce more trash each day. More people are living in large urban areas creating large concentrations of trash while at the same time making local landfill siting difficult, at best. We have also learned that cheap garbage disposal is likely to result in environmental costs which most communities have judged to be unacceptable.

We are moving into a future where solid waste is no longer considered a homogeneous commodity: paper, glass, aluminum, tin, compostables and plastics are being identified as separate product streams, to be returned to the market place as a production input or destined for a specific type of waste management. Segregating solid waste into various streams for potential recycling - so that local landfills last longer or that incinerator capacity can be scaled down - will force solid waste managers to deal with the realities of the marketplace. Markets for recyclables are governed by the laws of supply and demand and, government's desire to "do the right thing," avoid the cost of disposal, or prevent environmental damage, will not be sufficient in and of itself to create markets for recycled waste materials.

After efforts to reduce or recycle our waste, any remaining garbage may find its way to a landfill or a resource recovery facility which burns waste to recover its energy value. As disposal fees begin to reflect the cost of preventing environmental damage, costs will rise - dramatically in many communities. And, as the cost of landfill and incineration operations go up, so does the distance it might be shipped economically in order to find a suitable final resting place. Before, the cost of moving waste to disposal sites was the largest expense in solid waste management. Now, as disposal costs rise, the cost of transportation will become relatively less important. Thus, solid waste may become a local responsibility with regional or interstate consequences.

In the future, solid waste will create new and difficult challenges. For instance, what guidelines apply:

- when a community faces a choice between a MSW incinerator, which may affect air quality, or a landfill sited over a sole-source aquifer?
- when the high cost of environmental compliance at a regulated facility - as reflected in garbage rates - may lead to increased illegal dumping and burning?
- when encouraging recycling may mean siting production facilities which use recycled products, but which may also generate hazardous waste? and,
- when the politics of Not In My Backyard (NIMBY) may mean that new facilities built to higher environmental standards will either be forestalled at the cost of environmental protection, or built "somewhere else," thus setting up regional or interstate issues?

All of this also means that managing garbage no longer simply involves having the city council or county commissioners negotiate a contract with the low-bid hauler for garbage collection, and maintain a small staff to operate a landfill. The future for local government is likely to include: negotiating with other counties about joint facilities to handle wastes; negotiating recycling collection contracts which may be contingent on the resale prices for at least a half-dozen recycled commodities; committing government's purchasing power to build markets for recycled goods; and, campaigning to insure that appropriate facilities which handle recyclables - and the remaining wastes - are able to be sited within the area. It also means that all eyes will be watching the environmental implications, and costs, of all aspects of solid waste management. This includes paying for the closure, and perhaps the remediation, of old landfill sites.

For the solid waste industry, the future brings new challenges. Municipal recycling initiatives risk overwhelming the ability of recyclable materials markets to adjust, at least in the short-term. The growing interest in curbside collection, at least in large cities, has the potential to shift control of the current supply of recyclables from the recycling industry to the garbage hauling firms. For garbage collection companies, business may expand or diversify as the number and volumes of recycled or special waste streams grow. For landfill and incinerator operators, siting, construction, operating, monitoring and closure costs will escalate, to ensure that only the environmentally-sound facilities remain open. These higher costs, coupled with the hoped-for reduction in garbage volumes due to recycling programs, could cause local jurisdictions to "regionalize" and build only large-scale facilities serving many jurisdictions.

For the environmental community, solid waste will present few easy choices. To quote Pogo, in what has become an environmental cliche - "We have met the enemy and he is us." Local governments operate various solid waste facilities - incinerators, transfer stations, landfills, etc. - which might be the target of environmental concern. When local government reaches the limits of its ability to pay for these facilities, additional improvements will not come easily, and the high costs of regulated facilities may drive individual citizens to illegal alternatives. In addition, municipal solid waste (like municipal sewage programs before it) challenges the conventional wisdom of relying on enforcement to ensure compliance, as there are very prudent public health reasons for hesitating to shut down existing facilities which fail to meet environmental protection standards. Thus, if it is to be effective in protecting the environment, solid waste management at the local level must be reasonable, practical, and easily accessible for all generators and for all waste streams.

The politics of siting new solid waste facilities has intensified even in the face of citizen demand for better solid waste management. NIMBY concerns over new, and environmentally superior, facilities may frustrate and even retard bringing on line the next generation of management capacity, be it transfer stations, recycling centers, recyclable production facilities, incinerators or landfills. Yet without this turnover of the capital stock, bold new program initiatives may die on the vine and communities will be left with their current facilities, providing less than adequate levels of environmental protection.

This future is already here for many communities across the country and in the Pacific Northwest. In some cases, change is being driven by the lack of capacity in existing facilities, the inability to site a local disposal facility, new policies providing opportunities for recycling or new regulations governing the operation of landfills. Whatever the reason, communities are facing the challenge of developing solid waste management strategies which are at once: 1) environmentally sound; 2) politically acceptable; and, 3) economically affordable.

In a region which contains the international trading cities of Seattle and Portland, as well as rural Alaska villages supported by subsistence economies, solid waste problems in EPA's Region 10 cannot help but be diverse. How communities address their solid waste management needs depends on many factors: population, geographic size, location, financial resources, etc. No one solution is universally applicable to all communities. Some key characteristics, however, affect the choices available in solid waste management decision-making at the community, state and regional levels. These characteristics are summarized on the following table.

Each characteristic is expressed as a continuum - the ends of which represent extremes, with neither end necessarily "good" or "bad." In some cases, action could be taken to move a community along the continuum - such as increasing community awareness or becoming part of a regional planning effort. However, others such as location and climate are "givens" and cannot be changed, . Clearly, each community must consider its solid waste management choices in the context of reality defined by where it is, or hopes to be, in terms of these characteristics.

As the issue of "garbage" increases its hold on everyone's attention, and as counties and states assess their management options, there are essentially two questions facing individuals and policymakers at all levels:

- How do we reduce - through waste reduction or recycling measures - the amount of waste requiring disposal? and,

- How do we reduce the environmental costs associated with using our land, air and water as the disposal medium for the remaining wastes?

Out of these two fundamental issues, many others emerge: How do we plan for the future? What system is right for us? How do we allocate costs? How do we change our own behavior? Understanding which of these issues are emerging in the Pacific Northwest has been the objective of this project.

# SOLID WASTE MANAGEMENT SYSTEM DEVELOPMENT

Overall environmental goals, tempered by physical, political, economic and other parameters, influence management options for achieving public policy objectives.

## *ENVIRONMENTAL GOALS*

***Through source reduction & recycling, minimize the amount of waste requiring disposal.***

***Minimize the total environmental costs of disposal.***

## *PUBLIC POLICY OBJECTIVES*

***Environmentally Sound***

***Economically Affordable***

***Politically Acceptable***

| | | | |
|---|---|---|---|
| **Regulatory Parameters** | *Regulatory Issues* | No Match between Local Conditions & Federal Regs.<br>Enforcement Delegated to Local Authority<br>Enforcement Unlikely | Reasonable Match between Local Conditions & Federal Regs.<br>Enforcement at State Level<br>Enforcement Likely |
| **Physical Parameters** | *Demographics, Climate, & Terrain* | Small Population<br>Existence of Non-Regulated Options e.g. Open Burning/Illegal Dumping<br>Severe Climate<br>Sole Source Aquifer Concerns<br>Air Quality Concerns<br>No Suitable Landfill Sites | Pop. Large Enough for Environmentally-Sound Mgt.<br>No Readily Available Illegal Alternatives to Regulated Disposal<br>Manageable Climatic Issues<br>No Groundwater Concerns<br>No Major Concerns to Impact Incineration<br>Suitable Landfill Sites Exist |
| | *Waste Generation* | Homgeneous MSW waste stream<br>Low waste volumes, overall & per capita<br>Primarily Residential | Many different types of wastes in MSW<br>High waste volumes, overall & per capita<br>Residential, Commercial, Industrial |
| **Political Parameters** | *State, Local Planning Mechanisms* | No Local Government<br>No Regional Planning Structure<br>No State Planning Framework<br>No Technical Resources | Local Government<br>Community Part of Regional Planning Group<br>State Plan Outlines Local Options, Responsibilities<br>Adequate Resources to Support Decision-Making |
| | *Local Level of Concern* | No Community Awareness<br>Low Priority, given other concerns | Heightened Community Awareness<br>High Priority |
| **Economic Parameters** | *General Considerations* | Non-Cash Economy<br>No Access to Year-Round Transport<br>Transportation Costs a Constraint | Cash Economy<br>Access to Year-Round Transport<br>Transportation Costs Manageable |
| | *Collection - Who Owns?*<br>*- How Paid For?*<br>*- How Regulated?* | Exclusively Self-Haul<br>Privately-Owned Collection Service<br>All User Fee<br>No Regulation | Mandated Collection<br>Municipally-Owned/Operated Collection Service<br>All Tax Supported<br>State/Local Regulation |
| | *Disposal - Who Owns?*<br>*- How Paid For?*<br>*- How Regulated?* | Privately-Owned Facility<br>All User Fee<br>No regulation | Municipally-Owned/Operated Facility<br>All Tax Supported<br>State/Local Regulation |
| | *Recycling - Who Owns?*<br>*- How Paid For?*<br>*- How Regulated?* | Voluntary<br>No Bottle Bill<br>Privately-Owned Recycling Operation<br>Profit from Product Sales<br>No Regulation | Mandated<br>Bottle Bill<br>Municipally-Owned/Operated Recycling Operation<br>Supported by Local Gov't Subsidies<br>State/Local Regulation |
| | *Market Development for Recyclables* | No Government Procurement of Recyclables<br>No State/Local Assistance for Market Facilities<br>No State/Local Coordination on Siting of Recyclable Process Facilities<br>Virgin Materials Cheaper due to Subsidy | Aggressive Gov't. Procurement of Recyclables<br>Aggressive State/Local Assistance for Market Facilitie<br>Aggressive State/Local Coordination of Siting Recycling Process Facilities<br>Competitive w/Virgin Materials |
| | *Waste Reduction* | No Local/State Product Bans<br>No Packaging Constraints<br>Fixed Monthly Cost | State/Local Product Bans<br>Packaging Constraints<br>Highly Variable Can Rate |

## III. OVERVIEW OF THE NEEDS ASSESSMENT PROJECT

In order to profile the emerging solid waste concerns in each state, we interviewed over 120 people throughout the region. For each state, we selected one or more individuals in each of nine categories of involvement with solid waste management interests: state legislators; local elected officials and solid waste managers; city and county association officials; industrial solid waste generators; Indian leaders and those involved in land management on Indian or Alaska Native lands; public interest and environmental groups; recycling industry officials; solid waste industry executives; and, various other regulatory officials involved with solid waste issues, such as health district officers. While we did try to interview a cross-section of individuals in each state, we did not attempt to make any statistically-based survey per se. Rather, our interest was in speaking with those who are likely to be actively involved in the process of changing solid waste management in the region. We asked for their thoughts on the current situation and how that situation may be changing as their communities, states and the region as a whole address the two fundamental questions noted earlier. We also asked for observations on the appropriate role for EPA to play in addressing these issues. Those comments have been incorporated into our recommendations.

As a result of these interviews, a profile of each state's solid waste management concerns was developed, as well as a separate discussion of solid waste concerns on Indian tribal lands. Each profile was sent to the interviewees in that state for review and comment. These profiles form the basis of the regional observations found in the next section and our recommendations on the appropriate role for EPA Region 10 in the area of municipal solid waste. While the profiles focus on local and state issues, this report summarizes the key issues facing the Pacific Northwest as a whole and discusses those areas in which federal involvement may be most useful as the region moves forward on solid waste issues. Some issues cited in the profiles, such as the division of solid waste responsibilities between cities and counties or the type of legal mechanism needed to plan facilities serving several local jurisdictions, clearly need to be addressed at the state or local level, not by the federal government.

Originally, the project was intended to identify three major kinds of issues: an issue common to more than one state; a problem which shows no regard for state boundaries; or, a solution which requires the cooperation of more than one state. As the project progressed, the focus broadened to include issues that EPA Region 10 needed to know about in order to participate in national policy debate on solid waste issues, and areas where EPA could support system development at the state or local level. We have included thirty-one recommendations. While some of the recommendations fall exclusively within the scope of EPA responsibility, most do not and could be pursued by other jurisdictions. Given the wide range of activities which EPA could be involved in, and given that resource constraints have as much impact on the federal level as they do at the state and local level, we expect that EPA will need to choose which recommendations it may want to implement and with what priority. We also anticipate that these recommendations will stir interest on the part of those we interviewed, as well as others throughout each state with an interest in solid waste management. We hope that a dialogue will develop between the cities and counties, the states and tribes, and the federal agencies as to how, and by whom, various recommendations might best be implemented.

We also recognize that this is a full platter of recommendations. We have not assigned priorities to any of them, because it is likely that each state's circumstances will dictate unique priorities and because setting priorities should involve a process of discussion between the relevant parties, the states and EPA, in light of available resources.

## IV. REGIONAL OBSERVATIONS

### 1. Alaska, Idaho, Oregon and Washington communities face an extremely varied range of municipal solid waste management concerns and it will be important for EPA Region 10 to recognize this diversity as it develops programs and priorities.

Of all the EPA regions, Region 10 undoubtedly has the most varied array of municipal solid waste issues. Thus, in order to be effective, regional programs in municipal solid waste will need to reflect this diversity. At one extreme are remote Alaska villages, supported by subsistence economies, which must confront solid waste issues in the absence of a local government structure and/or no municipal tax base. At the other extreme are the international trading cities of Seattle and Portland. Seattle has become a national leader in recycling programs, while Portland is investing in innovative programs for MSW composting as well as pursuing long-haul disposal options.

In Washington and Oregon, two major factors contribute to this diversity:

- location in relation to the Cascades - the wet, west side sees more environmental problems associated with leachate from landfills than does the much drier east side, while at the same time being closer to recycling markets around the Puget Sound and in Portland.

- population density - the large urban areas are generally much further along in the process of shaping their future management practices than rural areas, both because the problems they face are that much greater - including those resulting from past disposal practices - and because the communities are large enough to afford the cost of improved solid waste management.

In Idaho and Alaska, the situation is more complex. Both states are largely rural, with a single major urban center and several smaller cities. Thus, these states clearly see the rural/urban contrast in solid waste management concerns. In addition, both encompass diverse physical environments (climate, topography, groundwater, rainfall, etc.) which complicate decision-making. Management choices in both states are economically constrained by distance from recycling markets, which means relatively more emphasis falls on disposal issues. Alaska, because of its climate, size and small population faces the most extreme range of solid waste management concerns and is more affected than the coastal communities of Washington and Oregon by a recent international treaty (MARPOL ANNEX V - generally referred to as MARPOL) requiring shoreline facilities to receive solid waste from ocean-going vessels.

2. **There is growing recognition throughout the Pacific Northwest that managing solid waste is no longer simply a process of collection and disposal, but requires the management of a diverse set of tasks including collection and marketing of recyclables and perhaps regional or even interstate collaboration.**

EPA's Agenda for Action encourages communities to think about waste management in terms of an integrated system of reduction, recycling, incineration and land disposal. Because of the diversity of factors influencing solid waste management in the region, such as distance to recycling markets and small populations, some communities have less potential than others to incorporate the various aspects of integrated waste management into their plans. Those communities which are more able to adopt a fully integrated approach to waste management are showing progress, though in varying degrees, toward that end.

In the Pacific Northwest, changes in municipal solid waste management are being driven by the cumulative effect of a variety of factors, such as implementation of the proposed Subtitle D criteria (generally referred to in this report simply as "Subtitle D"), MARPOL regulations, and a political commitment to recycling. However, change is not being driven by any widespread sense of a "capacity crisis" such as is being experienced on the East Coast.[2] Neither is it necessarily being driven by a realization of the environmental impacts of past solid waste disposal practices. While some larger communities are facing the consequences of past practices, and some smaller communities are aware of the need to upgrade disposal facilities, solid waste management is not generally perceived as an "environmental issue" in the same vein as hazardous waste management, for example. Rather, it emerges as a "local government" issue as jurisdictions seek the lowest cost way of complying with state and federal regulations, or as a "civic" issue as people press for recycling to either avoid disposal/siting questions, or to spur government to "do the right thing."

Reduction In the Northwest, people are interested in waste reduction, but recognize that packaging changes and many other reduction initiatives are best addressed on a national level because the buying power of any one community, or even the region as a whole, is insufficient to force change in mass marketing practices.

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[2] This needs assessment did not attempt to conduct either a formal capacity assessment, or an evaluation of the environmental impact of current or past solid waste management activities. However, in general, capacity concerns - the absolute lack of existing disposal options - do not appear to be the driving force behind most jurisdictions' deliberations on changing solid waste priorities.

Recycling Recycling is an important part of solid waste management efforts in the large communities, with Seattle providing a model program for urban recycling efforts and Portland pursuing innovative large-scale MSW composting technology. The success of recycling efforts in the region, however, has led to the current oversupply in the paper market. This oversupply creates a serious problem for the region, particularly as smaller communities and rural areas are considering recycling - either because it is perceived as the "right thing to do" or because of legislative mandates to provide opportunities to recycle. Efforts to make recycling a key management option may be limited in rural areas by the relatively low prices charged there for solid waste disposal; relatively high transportation costs to recycling markets concentrated in the Puget Sound and in Portland; and, in the case of paper, depressed markets. Nonetheless, recycling initiatives play an important role in changing people's perceptions about the waste they generate, and make them part of the overall solution and environmentally-sound waste management.

Incineration Incineration as a management option has received a mixed reception in the region. Smaller-scale incinerators (less than 100 tons a day) serve the needs of several Alaska communities, as well as two communities in the other states - Bellingham (WA) and Cassia County (ID). Marion County (OR) is operating a larger facility. Spokane (WA) is building a new large-scale MSW incinerator, while Tacoma (WA) is attempting to modify an existing facility to handle MSW. Several Puget Sound jurisdictions have rejected the incineration option in the face of local opposition. Those involved with incineration proposals sense the lack of support from the regulatory system for incineration, even though it has been placed as an equal to land disposal on various hierarchies of solid waste management options, and where, in specific instances, it may be the most environmentally-sound option available.

Land Disposal Landfilling remains the disposal option of choice for most communities in the region. It appears that a number of urban areas west of the Cascades would like to rely on large private disposal sites east of the Cascades for their land disposal needs. This trend will raise issues concerning transportation, the overall flexibility of the solid waste management system, and control over both the waste stream and the associated costs of managing it. Smaller jurisdictions in the orbit of these regional facilities are likely to use them as well. For more distant communities, smaller-scale regional landfills are being considered through cooperative projects involving a number of adjacent jurisdictions.

3. **Managing municipal solid waste is primarily a local government and tribal concern and most of these jurisdictions in the region have not developed sufficient staff or financial resources to plan, and pay, for recycling programs and for environmentally-sound disposal.**

In part, this reflects the lower priority which has traditionally been given to solid waste disposal, due to ignorance about the environmental impacts associated with solid waste disposal and the widespread belief that local dumps should remain a low-cost government service - that free dumping is akin to a "right." In part, it simply reflects the fact that small jurisdictions have small tax bases which currently provide enough for basic day-to-day governmental needs, but not enough money for long-term planning in solid waste.

There are a total of 119 counties in Idaho, Oregon and Washington. Two-thirds of the population lives in just 17 of these counties, and have populations ranging from 112,000 in Benton County (WA) on the Columbia River to over 1.3 million in King County (WA) on the Puget Sound. This means that one-third of the population - over 2.6 million people - are scattered throughout the remaining 102 counties: 20 have between 50,000 and 100,000 people; 26 have between 20,000 and 50,000 people; and, the remaining 56 counties have populations less than 20,000 - with 37 of these home to fewer than 10,000 people. In Alaska, the situation is more extreme, with Anchorage and Fairbanks home to over half of the state's population of some 500,000 people, with the remaining population scattered over a territory two and half times as large as Washington, Oregon and Idaho combined. In addition, there are thirty-one Indian reservations in the region, with eleven of these providing solid waste disposal on-site to a total of 23,000 people.

Because solid waste is a local community responsibility - at either the city, county (borough) or tribal level - increasing requirements for environmental protection on these small county or tribal landfills is raising the costs of operations beyond the current financial capability of many communities. If a community decides it cannot afford to comply with higher operating and closure standards, it is left with two options: use regional facilities (either multi-county or private facilities); or enter into a period of non-compliance with respect to environmental standards. Moreover, even the resources required to properly plan and site a regional facility (or negotiate with private facilities) are not always available in many of these communities, nor through state programs (or federal ones for Indian tribes).

4. **Even as smaller communities are now incorporating recycling into their solid waste management thinking, the success of recycling collection programs in some large cities brings the region face-to-face with the critical need for expanded recyclable materials markets.**

Just as additional levels of treatment have been required before municipal sewage can be discharged into the nation's waterways, more and more "treatment" of MSW prior to disposal in landfills or incinerators - in terms of recycling and separation of problematic waste streams - represents the future of solid waste management. However, the local governments in the region vary widely in their ability to implement this shift. Alaska, Idaho and the rural areas of Washington and Oregon generally are handicapped by the cost of shipping recyclables to markets or shipping problem wastes, such as medical wastes and tires, to appropriate handling facilities.

The urban areas of Washington and Oregon have access to markets and have been successful in encouraging recycling collection. Now, as existing markets are being overwhelmed by the success of current collection efforts, state and local governments are responding to the need to develop more outlets for recyclables. Also, as recycling becomes more and more of a factor in solid waste management, equivalency in recycling efforts between states and between communities will be more important as some host communities make a commitment to recycling a prerequisite for use of regional disposal facilities.

5. **Each state in the region needs to insure that regulatory policies are sufficiently similar in application (both within the state and with its border states) so as not to encourage the movement of waste to take advantage of regulatory differences - whether between large and small facilities, between counties or between states.**

Seattle's recently announced decision to use an Oregon landfill for its disposal needs marks the first time in this region that large amounts of municipal solid waste might be moved long distances for disposal and across state borders. While some movement of waste has always occurred, and some wastes are routinely moved across state borders (e.g. Lewiston (ID) contracts to use the Asotin County (WA) landfill), this decision marks a turning point in the way decision-makers are thinking about solid waste disposal options. This new mobility of solid waste increases the importance of regulatory consistency across state lines, so that private firms in one jurisdiction are not "low bidders" for a waste disposal contract by virtue of the fact that they face less stringent environmental regulation than facilities in other jurisdictions.

In addition, the region appears to be developing a two-tiered approach to landfilling of solid waste - large, private disposal facilities and much smaller, local government facilities. The regulatory community is faced with the need to insure that it is able to effectively regulate large, sophisticated firms with technical resources beyond what is available to most regulators; and, to insure that smaller operations upgrade their facilities as much as feasible, given the resource constraints of the communities served. Thus, a "level playing field" is necessary, so that no jurisdiction, or type of facility, can benefit from differences in environmental protection requirements.

6. **The inherent complexity of Subtitle D implementation will be compounded by the potential for significant "mis-matches" between what the regulations require and what ability a community may have, in this predominately rural region, to comply. The wide variety of topography and climate found in Alaska, Idaho, Oregon and Washington, creates a challenge for EPA as it works with states in the development of acceptable state regulatory programs.**

The implementation of comprehensive new standards for the operation of MSW landfills will involve the states, in their enforcement role, and EPA, in its state program approval role, in a difficult regulatory arena. Given the current version of the Subtitle D criteria, many communities in the Pacific Northwest simply do not appear to be able to afford the costs of compliance. While pooling resources to fashion regional solutions may make economic sense, this process may raise political issues which are unlikely to be resolved quickly. Thus, some communities may be expected to remain out of compliance for some time. Closing facilities which are out of compliance does little for the environment (or public health) if no better facilities are available. Complicating this enforcement picture is the reality that there are "alternative" methods of disposing of garbage. If garbage rates - due to environmental compliance costs - rise above some "acceptable" limit, individuals and businesses may recycle more, but they also may choose alternate disposal options - perhaps going to cheaper legal landfills elsewhere or disposing of wastes illegally.

Illegal dumping is happening now in both urban and rural areas - garbage being burned in wood stoves to avoid disposal costs, or tossed along our highways. Rising garbage rates have spawned the growing number of "No Household Trash" signs on trash cans in public parks. Enforcing any solid waste regulation creates this predicament, and the predicament for the states is made that much more difficult because of the varied nature of solid waste management capabilities in Pacific Northwest communities.

Not only will basic compliance issues be raised with the expected implementation of Subtitle D, but these criteria raise the issue of how existing landfills will be closed out. Idaho and Oregon expect many smaller landfills to close rather than comply with new federal regulations. However, these landfills will be closing under the environmental protections found in existing state statutes, which may not be sufficient to protect the public (and the jurisdiction) from the impact of future environmental problems. In addition, communities that are struggling to meet the higher costs of better solid waste management for today's waste stream may have few resources to cope with cleaning up the problems of past practices.

7. **Solid waste options requiring the long distance movement of wastes expand the number of constituencies affected by local solid waste decisions to include those along transportation corridors and in the receiving state and locality; thus, it reduces the control of exporting jurisdictions over their solid waste stream and increases the legitimate interests that a state (or states) have in local solid waste decisions.**

As noted earlier, increasing costs of waste disposal means that waste can economically be shipped further in search of a final disposal site. More long-distance transport increases the number of people affected by solid waste management and also makes the management system more vulnerable to transportation disruptions. Relying on long distance disposal sites (outside the home jurisdiction or home state) means the loss of total local control over the waste stream, as the sending jurisdiction is affected by the policies and priorities of the receiving jurisdiction. This is an issue being debated in Washington and Oregon as major cities are contracting for intra- and inter-state disposal east of the Cascades. As Idaho counties and coastal communities of Southeast and Southwest Alaska consider regional alternatives within their states, they may be addressing this type of issue as well.

8. **The apparent growing reliance on private disposal facilities raises two questions:**

    - **What entity is responsible for maintaining the overall operational flexibility in the region's solid waste management system? and,**

    - **How can conflicts between the policies and priorities of a host jurisdiction (state, county or tribe) be reconciled with those of a profit-oriented private facility?**

Currently, the Pacific Northwest relies on a large number of local landfills. However, at least five of the region's ten most populous counties are considering sending all or a portion of their wastes to a few private landfills in eastern Washington and Oregon and closing existing local facilities. As the major urban areas begin to rely on a relatively few sites, the overall operational flexibility of the system to respond to unexpected events (rail strikes, etc.) is reduced. Solid waste would remain a local responsibility, but individual local decisions could now have region-wide repercussions. Who is responsible for insuring the overall integrity of solid waste management systems in the Pacific Northwest? This is clearly a question facing Washington and Oregon.

Furthermore, in each of the four states, some initiative to provide solid waste management options is being taken by the private sector - through proposals for private disposal facilities. A growing dependence on private facilities complicates any long-term local or multi-county planning, as the private facility is a free agent in terms of marketing its disposal services. So, while some communities will welcome private operations as economic development opportunities and feel comfortable with aggressive marketing, other communities (or states) may feel their ability to make policy decisions in the area of solid waste management has receded with the growing importance of private facilities in their jurisdictions.

9. **Various Pacific Northwest jurisdictions which are responsible for municipal solid waste management see the need for leadership by the federal government in: conducting research into a variety of technical areas which have broad applicability in proper solid waste management; establishing standards for the procurement of various products containing recycled materials; developing packaging standards to ban certain material (if appropriate), reduce the volume of packaging requiring disposal and/or improve the "recyclability" of discarded packaging materials.**

Two factors contribute to local and state interest in this type of federal involvement. First, the growing technical and financial complexity of environmentally-sound MSW management requires research and analysis beyond the capabilities of most state and local jurisdictions. Since much of this research would have broad applicability, the federal government is seen as the logical focus for this activity, so that it is done most cost effectively. Of particular interest to the Pacific Northwest states could be research into "smart burn" technologies to handle paper and other source-separated materials and small scale MSW incineration technologies for rural areas.

Second, many issues associated with waste reduction and recycling are often best dealt with on a regional or national level. For instance, initiatives to reduce the amount of packaging are best dealt with nationally, to avoid creating 50 different sets of regulations which would pose a difficult and costly burden on manufacturers. Similarly, researching and developing standards for the application of MSW compost is also best done at the federal level, to establish appropriate exposure levels and insure consistency among the states. A federal role in this area would complement the federal government's role in developing minimum standards for the operation of MSW incinerators and landfills.

**10. Within the Pacific Northwest, four issues are emerging which have regional or interstate implications: the transportation of municipal solid waste, as well as recyclables, across state boundaries for disposal, processing or marketing; the need for consistency in procurement policies from state to state; the need for equivalence in recycling efforts and disposal regulations between the states; and, how local jurisdictions sharing regional disposal facilities protect their collective interest in the emerging interstate solid waste management system.**

No longer is any community an "island" with respect to municipal solid waste management:

- newspaper from the four states in the Pacific Northwest moves to Oregon for processing or to the Puget Sound for export;
- glass and aluminum move to processing facilities in these two states as well;
- markets for recyclables may place various communities in the region in competition with each other, as they seek markets (including access to processing facilities) for their waste products;
- emerging regional landfills in eastern Washington and Oregon may attract wastes from throughout the region, as well as other states throughout the West; and
- waste is moving to areas with less regulation and/or more open land to avoid the costs of disposal at more regulated facilities.

These movements of material are being made in the absence of any collective, coordinated oversight of the environmental and economic issues involved.

As a result of this changing system, four major issues are developing which will require regional dialogue, if not regional solutions: responding to the problems associated with moving waste and recycled materials across state boundaries; insuring that procurement policies for recyclables, and other government-sponsored market development activities, are consistent enough among the states to create larger rather than more fragmented markets; insuring that each state has a similar enough commitment to waste reduction and recycling so that interstate disposal involves only residual waste volumes; and, finally, insuring that regulatory oversight of the entire system is sufficient, so that the collective interest of the entwined local jurisdictions are protected as waste moves to fewer and fewer regional disposal sites.

## V. RECOMMENDATIONS

The following recommendations have been prepared for EPA Region 10's consideration as it shapes its solid waste policies, programs and research activities. They do not represent an exhaustive list of recommendations, as they could easily be expanded to include a host of others pertaining to specific state or local concerns. Three criteria determined whether a recommendation might be pertinent in this context for EPA to consider.

First, we have made recommendations where a federal presence would be either necessary or appropriate. Some of these recommendations are clearly directed to EPA Region 10 in its regulatory role, while others could also be implemented either by Region 10 or by the states working together, with or without assistance from EPA. In the interests of brevity, we have deferred any discussion about how any specific recommendation might be implemented. It is also likely that implementation schemes may vary by state.

Second, we have made recommendations in areas where the regional EPA office should become knowledgeable, so that it can provide input into policy decisions being made on the national level. For instance, issues associated with medical or industrial/agricultural waste disposal are being debated at the national level, thus the regional office needs to keep abreast of Pacific Northwest concerns. We also have included recommendations where EPA Region 10 could publicize innovative regional success stories as part of a national technology transfer effort.

Third, we have included recommendations where EPA's involvement would benefit more than one Pacific Northwest jurisdiction. Recognizing resource constraints at every level of government, it will be particularly important that any resources committed by EPA in the solid waste area have widespread usefulness.

Overall, these recommendations represent ways that EPA may help with the transition of Pacific Northwest jurisdictions into the next era of solid waste management. In making these recommendations, it is important to comment on the reception that this project has received. Almost without exception, our interviewees responded favorably to the process EPA has adopted: first, to learn about the issues in the region and then to work with the states, Indian tribes, local governments and other participants in the solid waste system in developing priorities. It is particularly interesting to note that Subtitle D, rather than being seen as an unnecessary and burdensome federal intervention, are generally seen by the interviewees as the impetus to make headway on nagging solid waste problems that communities have been unwilling or unable to address before. [This is not to say, however, that all provisions of Subtitle D are viewed favorably.] It is also important to recognize that, given the long hiatus in EPA's substantive involvement with municipal solid waste issues, a great deal of attention will be focused on how EPA makes its opening foray in this field. This increases the importance of EPA making a clear, positive contribution from the first.

The recommendations fall into eight general areas:

- assisting the development of integrated solid waste management systems, including all of the components cited in EPA's Agenda for Action (Recommendations 1-6);
- addressing the critical question of how local governments can finance environmentally-sound solid waste management (Recommendations 7-11);
- facilitating technology transfer relating to solid waste management options (Recommendations 12-16);
- promoting waste reduction and recycling efforts (Recommendations 17-22);
- fostering compliance (Recommendations 23 and 24);
- furthering improved solid waste management on tribal lands (Recommendations 25-27);
- conducting research into particular waste stream policy issues (Recommendations 28-30); and,
- promoting regional dialogue (Recommendation 31).

## System Development

Traditionally, solid waste management has been the jurisdiction of public works managers who simply operated a landfill or incinerator and periodically negotiated collection contracts. That situation has radically changed and will continue to change as more and more waste is singled out for special handling - either by reduction, recycling or special disposal. It is no longer adequate for county officials to consider solid waste management as synonymous with a landfill or a burner. However, this transition will take time, and support will be necessary to make this transition successfully.

1. **Both policymakers and the general public need to be educated about the importance of adopting a "systems" approach to managing solid waste; and, just as Subtitle D is a major catalyst for this change, education about its requirements would provide an ideal starting point for a "systems" discussion.**

Throughout the region, there is a need for public education to promote the understanding that: 1) proper solid waste management involves a system of waste reduction, recycling (collection and market development), segregation of special waste streams, and disposal (incineration and/or landfill); 2) the system is sensitive to changes in any one area and that the implications of potential changes need to be thought out in terms of the whole system; and finally, 3) different political support, public financing and managerial skills may be needed to accomplish the various tasks associated with the system being developed in each community. In particular, the public and decision-makers at all levels need to understand that recycling does not end with curbside collection.

Because the reality of complying with Subtitle D will, for many communities, be the impetus for re-thinking solid waste issues, "systems" education would appropriately be included in the context of fully informing both the public and policymakers about Subtitle D, when the final criteria are promulgated. The public needs to learn about the environmental consequences of improper waste disposal practices; how Subtitle D is designed to prevent future landfill problems; and, what this means in terms of a community's overall response to changing its solid waste practices. The public needs to be brought into this discussion, so that people will not react negatively to the increasing costs of environmental compliance. One observer suggested an aspect of this education campaign might involve a group such as the League of Women Voters, to discuss solid waste issues as a part of its outreach activities.

The second audience for this educational effort is much more specific: local county commissioners, city council members and their solid waste managers. It was suggested that one approach to their education would be a 30-minute video which explains and illustrates how a "systems approach" becomes the logical outgrowth of efforts to comply with the various provisions of Subtitle D. This audience also needs to understand the economics associated with various management options as it considers creating an appropriate system for each community. Many of the following recommendations, in this and other sections, deal with specific aspects of this educational effort.

2. **The states and/or EPA Region 10 may want to insure that a mechanism is available to coordinate the movement of solid waste management facilities, including recyclable processing operations, through any relevant air, water, and hazardous waste permitting processes.**

For instance, the host state might assign "an ombudsman" to each major solid waste project proposed for the region or conduct joint meetings that include all regulators involved in issuing permits for such a facility. This is particularly important for facilities such as paper mills using recycled newsprint in manufacturing which may produce hazardous waste in the de-inking process and, hence, be regulated under RCRA Subtitle C. The intent of such a process would be to work with project sponsors to help them understand the full range of regulations governing the permitting of a project, and then track the project through the regulatory process to identify and facilitate dialogue on any non-solid waste regulatory problems.

3. **To achieve intra- and inter-state consistency in environmental compliance and to provide a predictable planning environment for local jurisdictions, it is important that EPA Region 10 insure that the states, through their compliance efforts, are providing local jurisdictions with a clear message about what rules apply to their solid waste decisions and how those regulations will be enforced.**[3]

A number of local government officials questioned whether Subtitle D would apply to them - because of the size of their community, their remoteness or the fact that they live in an arid climate which minimizes environmental problems in solid waste disposal. Some observers suggested that this uncertainty may affect landfill closures before the implementation of Subtitle D - some operators may "bet" that the regulations will not be vigorously enforced and remain open. Others, "betting" that their facilities will be the subject of enforcement action, may close, only to find out later that there has been little or no enforcement. It is obviously not good public policy when local governments see themselves in a situation where they might be called upon to "second-guess" environmental regulations and enforcement as they try to provide such a basic service as solid waste management. As currently envisioned, states will submit compliance programs to EPA for approval; and, once EPA approves a state program it would have no enforcement role in that state. As EPA works with the states to develop approvable state solid waste programs, it needs to ensure that the state will provide intra-state clarity on enforcement issues and that sufficient consistency is achieved between the various state programs to prevent waste from moving across borders to take advantage of differences in enforcement policies.

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[3] Of related importance is the need for regulatory certainty regarding the management of MSW incinerator ash. The State of Washington is currently considering this issue, and EPA has requested Congress to codify in statute EPA's preferred technical approach. Although outside of the scope of this project, such certainty is urgently needed.

4. **For many small communities, small financial awards or grants may be useful in insuring the success of innovative efforts in solid waste management and would be a tangible way of recognizing a community's initiative.**[4]

Given the large number of small jurisdictions in the region grappling with solid waste issues, it may be appropriate to make small financial awards to help along innovative projects at key points and/or to recognize a community's current efforts and encourage continued good work. As these grants would be aimed at small jurisdictions, it will be important that as few "strings" as possible are associated with them; many smaller counties do not have staff resources to devote to grant writing or extensive follow-up reporting.

5. **EPA Region 10 should work with the National Marine Fisheries Service (NMFS) and the Coast Guard to mitigate the impact of the MARPOL ANNEX V requirements on coastal communities in Alaska, Washington and Oregon.**

Whereas the prospect of Subtitle D implementation is providing the impetus for change in many communities in the region, in some communities it is MARPOL which is forcing a reevaluation of current solid waste management practices. Because the Coast Guard has the power to close down a port should it not comply, compliance with MARPOL could directly affect the economies of these coastal communities. And, while MARPOL may provide a more direct incentive to action than the prospect of complying with Subtitle D sometime in the future, it is important for coastal communities to plan any responses to MARPOL in the context of EPA's expected regulations. EPA needs to establish a working relationship with the Coast Guard and NMFS, and work jointly with affected communities.

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[4] Many observers believed that MSW issues either warranted or needed significant federal financial assistance in order to be addressed properly. Since we were aware of no pending Congressional intent to provide this type of support, we restricted our focus to recommendations appropriate for the level of resources which may be available to EPA Region 10.

6. **EPA, and the Congress, should provide leadership in establishing uniform standards for the procurement of various products containing recycled materials, in developing ways to either reduce the volume of packaging requiring disposal or improve its "recyclability;" in conducting research into a variety of technical areas which have broad applicability; and in pursuing any other aspect of the development of better municipal solid waste management which is most appropriately, and/or most efficiently done at the federal level.**

EPA Region 10 should advocate that EPA headquarters forge ahead on these issues, and others as appropriate, where action by the federal government would be the most appropriate way of implementing policy or where action by the federal government is the most efficient way of providing any needed research and analysis. More detailed discussion of specific areas where federal leadership is needed is found in recommendations #16, #17 and #22.

## System Financing

Making environmentally-sound solid waste management affordable is the critical issue for most communities in the Pacific Northwest. Meeting more stringent standards for landfill and incinerator operation is expensive particularly for small counties and will raise the fixed costs of operation. Special handling for specific waste streams is also costly because of the management requirements in dealing with the often small volumes involved. Management decisions involve difficult choices as greater recycling rates and more segregation of problematic streams reduces the volume of "plain old" MSW that is destined for a landfill or incinerator, thus increasing the "per ton" disposal cost while adding the costs associated with recycling and source separation. This is particularly a problem in communities that operate landfills which have stable or declining populations (such as many rural jurisdictions); any decrease in volumes because of recycling and reduction makes the "per ton" burden of improving landfills even greater.

While having consumers pay the "true cost" of environmentally-sound solid waste management is seen by many as the key incentive for increased source reduction and recycling efforts, the consumer of solid waste services may rebel at some point, creating additional environmental problems through illegal dumping and incineration, or by using cheaper facilities in a neighboring jurisdiction. Greater recycling rates and more segregation of waste streams plays havoc with attempts to forecast long-term volumes in need of disposal or incineration. Many cities and counties in the region will need help as they attempt to work through these issues.

**7. A financial model of landfill costs including initial capital costs, operating costs and closure costs needs to be developed for use by small communities.**

It would be beneficial to smaller counties to have a model to help them estimate the costs of complying with all aspects of Subtitle D. It should identify the significant costs and allow users to modify key parameters to suit individual circumstances. A good vehicle for distributing this information may be the state associations of cities and counties.

**8. Model contracts governing the new relationships local jurisdictions will be involved in need to be developed, and then distributed through some educational program to localities throughout the region. Specifically, cities, counties and tribes are likely to find themselves in one of these relationships and may need help in understanding the associated risks and responsibilities:**

- **as a host jurisdiction to a private facility;**
- **as a long-term customer for private disposal services; or,**
- **as joint owner/operator, with other jurisdictions, of a disposal facility.**

As local governments increasingly look to regional solid waste disposal options, either publicly or privately held, they will be involved in extensive negotiations as a customer, host county or co-owner of a regional facility concerning the allocation of various costs and risks, including the costs of complying with future regulatory changes and the risks of liability if any of the protective systems fail. In negotiations with large private disposal facilities, there may be an imbalance in legal resources in favor of the private entity. Thus, each local government or tribal council needs to be educated in this area, so that they do not "reinvent the wheel" on contractual language, nor become party to contracts with insufficient safeguards for the public interest. To the extent possible, such a contract should be tailored to reflect the variations in law among the Pacific Northwest states. A number of the larger counties in the region have already gained significant experience in this area. It would be desirable if a training program could build on their expertise - possibly through workshops or meetings of county attorneys, etc.

**9. Information needs to be developed about overall system financing mechanisms including post closure financing mechanisms, and that information needs to be transmitted to local jurisdictions in the context of a broader educational effort.**

As Subtitle D will greatly raise the operating costs for landfills, communities will need to know more about how needed revenues might be raised through some combination of user fees and tax increases. In addition, Subtitle D requires that owners and/or operators set aside funds to insure the environmentally-sound closure of landfill facilities. Local governments in the region need information about what types of closure financing mechanisms are appropriate and how they might be funded. Again, work of this sort might be best accomplished through a task force of county/city finance officers working with support from EPA when the final requirements are implemented.

10. **Innovative ways to provide and fund hazardous waste collection programs to serve the needs of households and conditionally-exempt small quantity generators (CESQG) should be developed.**

The costs of one-day clean-ups are very high and there are doubts that such efforts are the most efficient way of routinely removing these wastes from the municipal solid waste stream. (In addition, there is some concern whether the solid waste system should be forced to bear those costs alone.) Some communities are developing new approaches to this issue. Anchorage (AK), for example, has created a model program for funding of the routine collection of these wastes, with revenues from tipping fees at the landfill, from property taxes, and from water/sewer utility bills. An analysis of that program, and others, would provide useful information for communities, particularly smaller ones, which are wrestling with an equitable way of assigning those costs.

11. **Communities need information on how a "systems" approach to solid waste management can be carried through to a "systems" approach for financing facilities and operations.**

To the extent that solid waste is being managed through a systems approach, it might also need to be financed as a system. Thus, for a community with both an incinerator and a landfill, there might be a single bond issue, and a single tipping fee. Or, it might be appropriate for the capital cost of recycling processing facilities to be included in an overall financing package, and automatically rolled into a "solid waste management" charge, rather than being tacked on as a surcharge on "garbage collection" rates. Communities need to know what options are available to them to finance an entire solid waste management system, including recycling, incineration and landfilling, as well as addressing the unique combination of fixed and variable costs that they are facing.

## Technology Transfer & Research

Throughout our interviews, local/tribal officials and solid waste managers emphasized the need for technical and planning assistance as well as the need to prevent the duplication of efforts in the studies and analyses required as part of state planning efforts or required to implement some regional scheme. While landfill siting studies must be site specific, various generic economic analyses of incinerator operations or recycling technologies might easily provide a good - and inexpensive - starting point for many communities as they assess their options. These officials were very emphatic about their desire to learn from the experiences (both positive and negative) of other jurisdictions. These recommendations address this concern in an effort to: 1) get existing ideas out to communities which could put them to work; 2) get information on proven solutions from communities in the region to other communities experiencing similar choices; 3) share the Pacific Northwest's experiences with the rest of the country; and, 4) promote technical research into special waste uses and standards.

**12. As local governments encounter technical questions, regular exchange of information with other jurisdictions about solutions that are being tried throughout the region and the country would be extremely beneficial.**

A regular newsletter for distribution to all counties in the region, or some sort ot electronic clearinghouse which can be easily accessed by local governments, are ways that EPA could implement such an exchange of information.

**13. A peer-to-peer training program would enable various state, local and tribal officials, including solid waste managers, facility owners/operators, and regulatory staff, to directly share their expertise with their peers throughout the region.**

This might be structured as an offshoot of the clearinghouse concept or may be appropriately tailored for the needs for specific professional groups, such as workshops held for county attorneys, finance officers, etc. For instance, a special task force of county attorneys may be created to provide workshops on recycling and landfill contracting risks at meetings of professional associations.

Joint training of the regulatory staffs, particularly in the states of Idaho, Oregon and Washington, would help to achieve consistency in the application of various regulations so that waste generators do not seek out the least regulated landfill. It will also be important for the regulators overseeing the large private regional landfills to participate in working sessions to share information about the technical problems experienced when these landfills come into operation, and thus to improve the quality and consistency of regulatory oversight. In particular, additional training for hydrogeologists was mentioned as a particular need for many states in the region.

Finally, to improve regulatory consistency as well as insure adequate operating standards at all facilities, EPA Region 10 may want to take the lead in working with the states to develop either a voluntary or mandatory certification program for operators of incinerators, landfills, and recycling operations, as each state sees fit.

**14. In order to fulfill its liaison role within the region and between the region and the nation as a whole, EPA Region 10 should monitor innovative technical projects throughout the region.**

While acting as this liaison, EPA Region 10 involvement would benefit a project in two ways: it could relay pertinent national information of interest to the managers of the local project; then EPA could disseminate information about the project throughout the region and the nation. This might involve tracking the closure of a major landfill or monitoring the success of innovative composting or household hazardous waste (HHW) management programs.

**15. Within the region, there is a need for a central resource which can provide both a "second opinion" on the technical claims made by vendors of various solid waste management technologies.**

One of the recurring needs expressed by local government officials was the need to get a "second opinion" on the technical claims made by solid waste management industry vendors, including those from the recycling segment of the industry. As solid waste management increasingly becomes "big business," firms are entering the industry and offering "solutions" which may be untested and untried. One community in the region contracted for a technology to compost mixed MSW - a technology with a supposedly "proven track record." However, that track record involved composting paper, not mixed waste and, not surprisingly, the effort is proving problematic. In part because these technologies may be new, and in part because many jurisdictions may not have staff qualified to evaluate their technical merits, jurisdictions may have trouble assessing the validity of a vendor's "sales pitch."

**16. This region would benefit from additional research in at least two areas: small scale incineration and "smart burn" options (using source-separated materials as fuel in industrial boilers).**

Research on small scale incinerators might yield results which would be particularly applicable for some Alaska communities. Investigation of "smart burn" options would provide interim management options for source-separated materials, pending development of expanded recyclable markets. EPA Region 10 would be able to tap into resources which might not otherwise be available to the states, by leveraging the work done by EPA headquarters and by industry nationwide.

## Waste Reduction and Recycling Issues

In Washington and Oregon, local communities are being required to provide some opportunity to recycle for their residents. The Idaho legislature is also likely to be reconsidering such legislation in its next session. As more and more communities become involved in recycling, they need to realize the fundamental differences between management intensive recycling programs and more traditional programs of solid waste collection and disposal. Recycling programs - whether large or small - are not so site specific that generic analysis could not provide a valuable starting point for community planning efforts. As well, a commitment to both collect and use recycled goods must be institutionalized by both government and private industry.

**17. EPA Region 10 should participate in the national debate over all aspects of waste reduction, product bans, packaging and other issues as they arise.**

Clearly, some debates on environmental issues are best held on the national level. It is important that EPA Region 10 understand the concerns of the communities in the region with respect to these various issues as they arise and then communicate those concerns to national policymakers. The region is often at the forefront on environmental issues, thus it is important that its view of emerging issues be reflected in national policy. In particular, waste reduction was perceived by most observers as the most important factor in long-term solid waste management - one whose potential has not yet begun to be realized in the Pacific Northwest.

**18. Communities need to be educated about the economics of operating recycling programs, including the types of risks involved and how the cost of recycling programs might be met; this might include developing guidelines for model programs for communities of various sizes.**

Communities need a framework to help them understand the costs associated with recycling options (e.g. curbside/drop box, source-separated/mixed) and how those costs

**might be most appropriately met - through higher tipping fees, a household service charge, etc. This analysis should also include some discussion of how to weigh the cost of recycling against, for instance, the benefit of extending the life of the community's landfill.**

This education is particularly important for solid waste managers who may find that dealing with recycling issues offers challenges outside the current range of their expertise. While disposal is becoming ever more technical and capital intensive, recycling is labor intensive and market-driven and may involve a community in a host of complicated market issues.

**19. Solid waste managers and local government attorneys need to be educated about the risks of recycling so that risk might be managed appropriately in contracts for private sector recycling programs.**

Contracting for the collection and marketing of recyclables involves local governments in whole new areas of risk, such as: the risk of lower participation rates than planned for; the risk of non-recyclables being mixed with recyclables; the risk of price declines for key commodities; the risk of no market being available at any price; and/or, the risk of storing flammable commodities until suitable markets can be found. Local governments need education about those risks and how they might be allocated between the local government and the recycler. Such a program might leverage the existing expertise on the part of larger Pacific Northwest communities which have already negotiated contracts in this area. Again, a good vehicle for launching such a program would be the state association of cities and/or counties, or the state association of county/city attorneys.

**20. The production of virgin materials is often subsidized; thus, the extent to which these subsidies affect the competitiveness or the use of recycled materials should be investigated.**

One of the impediments to the use of recycled goods is the fact that virgin materials are often either cheaper in absolute terms, or relatively cheaper in terms of a cost/performance comparison. In some cases, virgin materials are cheaper because they benefit from government subsidies, frequently federal subsidies. [And, in addition to subsidies, some virgin materials may be cheaper because they originate in a country with less stringent environmental standards.] EPA nationally should examine the impact of subsidies for virgin materials on the economic attractiveness of using recycled materials.

21. **Given the many and varied market development initiatives already underway in the region, EPA Region 10 may want to concentrate its efforts in three areas: 1) being a liaison between regional and national marketing development efforts; 2) helping to provide a focus, in the short-term, to efforts which address the developing crisis in paper markets; and, 3) providing additional technical research support on uses for recycled paper, and on composting technologies and uses.**

The question of government's ability and responsibility to enhance market opportunities for recyclables is being greatly debated today in the Pacific Northwest. Fundamentally, government has three roles to play in market development: 1) insuring a steady supply of recyclables through mandated programs, a necessary prerequisite for major investment in process facilities; 2) influencing the attractiveness of the economic climate at the margin, through tax policies, economic development/siting assistance, waste exchanges, and moral suasion or informational assistance so that industry will support recycling; and, 3) insuring that government procurement policies are used as a tool to stimulate demand for goods containing recycled materials.

A great deal of market development effort is already underway in Washington and Oregon. Together these two states hold the key to the Pacific Northwest's ability to develop markets for recyclables, both in terms of processing facilities and recyclable volumes. Given that the "movers and shakers" in the key recycling markets are few and likely to already be involved in one of the existing state or local task forces or marketing councils, an independent EPA effort in developing markets would not seem to be needed at this time. Rather, EPA Region 10 should track the workings of these state and local processes, feeding them information on emerging national policies and, conversely, sharing their concerns with national policymakers.

However, in the short-term, there is an impending crisis in the recycling market for paper. Prices are falling and some grades of paper are expected to be worthless by this fall. If key recyclables generate little or no revenue, the full cost of collecting the recyclables and transporting them to the end user will ultimately fall on the consumer, on top of existing garbage collection costs. This may bring to a halt many communities' efforts to use recycling as a solid waste management option. Thus, it may be appropriate for EPA Region 10 to convene a meeting of representatives from the various market development efforts, the appropriate state officials, and private industry to determine how this oversupply of paper can be dealt with in the short-term so that long-term efforts at promoting recycling are not adversely affected.

**Research needs to be done on expanding the markets for two major waste streams - paper (particularly new uses for mixed paper) and compostables (primarily yard waste). In addition, research is needed on new markets for wastes currently not recycled, such as agricultural wastes. The region enjoys an advantage over other regions in paper recycling, because primary production facilities are located here and because our ports provide good access to Asian markets which use recycled paper as a raw material for their processing facilities. In addition, the large nursery industry in the Pacific Northwest provides a natural potential market for high-quality compost products. Thus, EPA Region 10 may want to capitalize on these advantages and concentrate its research efforts in paper and compost marketing. It would be important for EPA to coordinate any research it supports in these areas with efforts currently underway by other jurisdictions, as well as nationally.**

22. **As more and more local governments buy products containing recycled materials - particularly paper products and compost material (for road landscaping, etc.), there is a growing need for standardization in product specifications, and education about these standards.**

As the objective of buying recycled materials is to increase the market for post-consumer materials such as old newspaper and used office paper, it is important for consumers to know what portion of the paper they are buying is truly recycled municipal solid waste. Thus, some definition of what "recycled paper" means or some grading system for compost products is necessary for consumer awareness and quality assurance. Such a definition for recycled paper has been developed by EPA nationally. However, information about these standards has not been widely disseminated throughout the region. Such standards are still not available for compost products, however.

It is clearly important for the public sector to agree on some standardized definitions especially as such specifications are needed to implement government procurement of recyclables. The private sector may not be able to fine-tune product manufacture to meet a whole gamut of "recycled" product specifications. Standards are probably best developed at the national level, with input from the various regions, to insure nationwide consistency. However, until such standards are developed, it would be appropriate for all major government buyers to adopt the same standards. This effort would need to be coordinated with similar efforts in California. Because California dominates the West Coast market for any product, its standards will often become the "de facto" procurement standards of the Pacific Northwest. Once standards are established, EPA Region 10 could use its clearinghouse to distribute information about vendors that are able to comply with these specifications.

## Compliance

As noted in the Regional Observations, promulgation of Subtitle D regulations will involve the states (and EPA Region 10 with respect to tribal lands) in a delicate compliance situation which calls for fairness, while at the same time recognizes the need for appropriate flexibility. The states will need to develop realistic timetables for compliance, provide technical assistance as needed, and carefully weigh the type of enforcement appropriate for various types of communities. They will have to decide how to deal with communities who are out of compliance, recognizing the inherently economic and political nature of compliance and the difficulties associated both with compliance and enforcement actions. An enforcement strategy to move communities forward in solid waste management would have a distinctly different character than one designed to punish recalcitrant jurisdictions.

23. **The states need to recognize that certain landfills are more likely to present environmental risks than others and to develop compliance priorities accordingly, including priorities for inspections, a timetable for enforcement actions, timing of inspections, determination of the "good faith" of operators, etc. EPA Region 10 should tell states how to portray a clear picture of such an approach in an approvable state program, and provide whatever technical assistance may be necessary for effective implementation at the state level.**

This recommendation could involve EPA and the states (and possibly local health districts) in a close working relationship. Thus, EPA will also need to work with the states to clarify what, if any, federal oversight will occur when Subtitle D becomes effective, and states apply for and receive federal approval of their programs to implement Subtitle D.

24. **Given that promulgation of Subtitle D will prompt a number of landfills to close rather than comply with the criteria, and in view of uneven environmental protections governing landfill closure found in state statutes, EPA Region 10 should assist the states in developing workable closure programs to minimize the need for future CERCLA or state-level clean-up actions.**

Many landfills within the region will be closing rather than comply with Subtitle D. The regulations governing these closures vary from state to state, hence the environmental protection inherent in the closure process will also vary. Landfill closures, not surprisingly, are most likely to occur in smaller communities with few staff or financial resources to insure an environmentally-sound closure process. This is particularly an issue in Oregon and Idaho. Thus, some form of EPA non-regulatory assistance to these communities now, may prevent more serious EPA regulatory involvement later should environmental problems arise due to insufficient closure actions.

## Tribal Concerns

**25. The various Indian tribes in the region and the governmental agencies assisting them (notably BIA and IHS) need to: 1) get "up to speed" on the ramifications of Subtitle D; and, 2) coordinate the provision of technical assistance to those tribes which are either upgrading their landfills, or working with local jurisdictions to develop a regional approach.**

In content, such an educational outreach program would differ little from the various programs recommended here for use throughout the region - on Subtitle D requirements, on the need for a "systems" approach and on contracting and financing education. However, the audience would differ in that it would include tribal leaders and managers as well as staff from the government agencies involved in providing technical, environmental and public health assistance to Indian communities.

**26. EPA Region 10 needs to facilitate the integration of Indian tribes into regional planning efforts for solid waste recycling and disposal efforts.**

Solid waste management creates a dilemma for the tribes in the Pacific Northwest. Because of their unique status as sovereign governments, a number of tribes in the region expressed concern about their working relationships with surrounding counties in addressing solid waste concerns. It may be productive for EPA Region 10 to provide assistance, as needed, wherever Indian tribes and/or neighboring jurisdictions indicate an interest in working with each other on solid waste management issues. It may want to identify a model process which involves tribal/county coordination on regional solid waste issues and then arrange for those tribal leaders and local government officials to work with their counterparts in other areas as "advisors" - a smaller scale peer-to-peer effort focussed on process issues.

**27. EPA Region 10 should provide technical and policy assistance to Indian tribes, upon request, which are interested in assessing reservation sites for solid waste related development projects.**

Indian reservations may be seen as appropriate sites for solid waste management facilities and such facilities may provide economic development benefits to tribal members. However, it will be important for the tribes to have technical resources, as well as policy resources, available in order to evaluate the true costs - in terms of environmental impact and greater regulatory responsibility - and the realistic level of benefits that the tribes would realize.

## Research on Waste Stream Policy Issues

As solid waste management becomes more complex, new policy issues are emerging which require analysis. The following recommendations involve areas where policy makers will require additional information before they are able to fashion appropriate responses.

**28. EPA Region 10 may want to investigate how medical wastes are currently handled, what public health risks are associated with that handling and what options are available - or should be available - to improve handling of this waste stream.**

The presence of two medical waste incinerators in the region raises issues of whether those wastes will be brought into the region from other states for disposal. In addition, this issue is becoming more prominent on the national level, as incidents of illegal disposal of medical wastes raise public concern.

**29. "Return to vendor" programs, similar to "bottle bills," have been suggested as a way of managing certain special wastes that may be desirable to segregate from the municipal solid waste stream; the liability and financing issues surrounding such programs need to be investigated.**

Various observers have suggested instituting a "bottle bill" approach to some household hazardous waste (HHW) or other special wastes - where deposits would be placed on various products and refunded (in whole or in part) when spent products or containers are returned to the retailer. Programs such as this may place vendors in an awkward legal position with respect to RCRA/CERCLA liability. EPA Region 10 needs to pursue the liability issues and should investigate how much it will cost to dispose of these materials; how that cost could best be shared between the general MSW program and the user (in the form of his forfeited share of the deposit); what incentives are needed to involve vendors in such a program; what storage requirements would be appropriate as these materials are collected; and, what the feasibility of government-run facilities might be.

30. **The entire process of disposing of agricultural wastes needs to be explored, because of the problems these wastes cause in legal MSW disposal facilities, as well as problems associated with illegal or inappropriate disposal methods.**

The area of agricultural wastes was identified as a problem in Washington, Oregon and Idaho. In some cases waste is moved across state lines for illegal disposal, in other cases legal disposal creates problems for MSW facilities (slaughterhouse blood, for instance). Like medical waste, the region would benefit from a better understanding of the scope of this issue.

## Regional Dialogue

31. **As noted in the Regional Observations, there are issues emerging which have regional implications, including transportation of MSW and recyclables, consistency in procurement and recycling policies, and the need to insure sufficient collective regulatory oversight of the regional facilities and systems used by many local jurisdictions. EPA Region 10 should explore ways in which to address the issues on a regional basis.**

EPA Region 10 has a range of options. EPA Region 10 might involve itself directly by convening a targeted regional leadership body to address some or all of these issues. This could be done by a group that would meet on a regular basis to discuss regional solid waste issues, or it could be done through a series of task forces formed to address specific issues. Alternatively, it could convene a symposium on these issues, bringing together the audience of interested parties in the four states to seek consensus on the best way to approach these issues. Or, EPA Region 10 could simply encourage the four states and their local jurisdictions to conduct this dialogue among themselves, on interstate issues of most concern to them. Given this range of options, and the range of issues and parties involved, EPA Region 10 should consult with the states and other appropriate parties to ascertain the best role for the federal government in this area.

## VI. ALASKA PROFILE

### Preliminary Observations

We have identified eight major issues facing Alaskans with respect to their management of municipal solid waste. These are briefly summarized below and then each issue is explored in greater detail.

1. Lower Priority of Solid Waste Issue Municipal solid waste has had a relatively low profile as an environmental issue commanding statewide attention. There appear to be three reasons for this -

- Many Alaska communities face more immediate problems on a daily basis, such as having a safe drinking water supply or some minimal safe handling of sewage. Thus, solid waste concerns tend not to be ranked as highly when scarce resources are allocated. In addition, solid waste management is generally not perceived as a problem for there is no "capacity crisis" as such in Alaska.

- The environmental costs associated with current solid waste disposal practices are not fully acknowledged, partly because neither the communities nor the state have the resources to monitor and analyze these impacts.

- There is no homogeneity in community solid waste management practices in Alaska, thus there is little commonality in solid waste problems. As a result, there has not been a united effort by concerned parties to raise the overall profile of the issue.

2. Discrepancy between National Environmental Standards and Alaska Conditions Alaska's unique characteristics and history result in a mismatch between Alaska's existing conditions and the environmental standards and enforcement practices designed for communities in the rest of the country. This raises two issues:

- What is the appropriate way for the regulatory agencies to acknowledge this "mismatch?" and,

- To the extent that national environmental standards are inappropriate, what standards are useful as a means of reducing the environmental costs associated with solid waste disposal in Alaska?

3. Limited Availability of Resources at Every Governmental Level Throughout Alaska, there are limited resources to address solid waste problems because many communities lack local tax bases and tend to pay for services and, to an even greater extent, capital improvements with state funds. Thus, the state - through the state legislature - is likely to set spending priorities. Capital improvement programs such as solid waste facilities must, in turn, compete with other spending priorities (schools, roads, sewers, etc.) The state's revenue crisis caused by lower oil prices exacerbates this situation. In addition, communities may feel unable to charge a user fee which covers the full cost of providing solid waste services because that might encourage use of readily available illegal alternatives, such as dumping at remote roadsides, in rivers, in the ocean or on ice. Furthermore, many communities do not have any local government structure, per se, making planning, building and operating better solid waste management facilities difficult, at best.

4. Industry Regulation in a Changing Environment Regulation by the Alaska Public Utilities Commission of the solid waste hauling industry raises several issues. First, state regulation decreases the flexibility of the overall system by precluding local governments from regulating that portion of the industry operating in their areas in accordance with their solid waste objectives. It also is institutionalizing - through the rate structure - a system where collection companies also handle recycling activities, possibly preempting the growth of a separate recycling industry. Finally, private disposal operators are not regulated under this system. While in the past collection was the largest cost associated with garbage services, in the future, the cost of environmental compliance is likely to shift a growing percentage of the overall cost of garbage service to disposal. For those communities served by private disposal operations, there will be no regulation as to how - or when - these environmental costs, including the ability to meet long-term closure costs, are passed on to the customer.

5. Economic Reality of Alaska Commercial Recycling While recycling is clearly an essential component of a solid waste management system in many places, it faces a difficult economic challenge in establishing itself as a crucial part of Alaska's solid waste management system. The economics of recycling depend on one of two things - the profits resulting from reselling the recyclables or the amount of subsidy paid by communities to recyclers as a means of avoiding the cost of disposal. Profits from Alaska recycling are likely to be slim to non-existent for most commodities because of the cost of shipping a small volume of goods to market in Seattle or the Orient. Subsidies are likely to be paid only by communities facing a disposal capacity crunch which makes it worthwhile to pay to divert waste from the system. None of our interviews suggested that such lack of capacity was a determining factor in establishing

recycling programs in Alaska. However, public support of recycling activities is seen as important to change the way Alaskans view their waste stream and to involve them in environmentally-sound solid waste management.

6. Special Waste Issues Complicating solid waste management issues in many communities is the issue of special wastes, notably used oil, used anti-freeze and asbestos. Climate plays a part in this problem. For example, once items such as paint freeze, they become unusable and hence a waste product. Most Alaska communities have neither a suitable landfill to receive this waste nor the wherewithal to ship it out for appropriate disposal.

7. Planning Vacuum Compliance with tighter environmental regulations, whether it is EPA's Subtitle D for landfills or any of its anticipated regulations on incineration or ash management, raises the fixed costs of operating a disposal facility. This, in turn, spawns the need for larger, regional facilities serving more people and thus, spreading these environmental compliance costs over a larger rate base. Because so many Alaska communities lie in the Unorganized Borough, where no legally organized government exists beyond those of the isolated villages, there is a governmental vacuum for regional planning efforts in solid waste.

As well, even many of the organized boroughs do not have planning mechanisms in place to deal with this issue, either within the borough or with adjacent jurisdictions. For instance, communities in both Southeast and Southwest Alaska recognize the need to comply with the MARPOL ANNEX V (MARPOL) requirements for shoreside handling of ship board wastes, as well as to improve compliance with environmental standards. Thus, communities in these regions are currently using informal methods to work together to think about solid waste issues as a region. However, these areas lack a vehicle for formal coordination between boroughs and those communities lying outside borough boundaries.

8. Need to Recognize Regional Differences Each of the issues outlined above exists to a greater or lesser extent in all of the communities throughout the state. However, each issue takes on a different aspect when viewed in a regional or geographic context. In this profile, there are four distinct Alaska regions which have different capabilities for dealing with these issues: Southcentral, Rural, Southwest and Southeast. For instance, while Anchorage may be troubled by lack of financial resources for implementing solid waste management improvement, it has in place a mechanism to deal with that issue - the tipping fee. However, rural communities facing the same generic problem of lack of resources have far fewer options, for they do not have

regulated dumps or tipping fees. Nor do these rural residents have the cash incomes needed to pay these costs. Thus, each problem must be understood on two levels: in terms of the regional characteristics which affect practical solutions about solid waste management and in the context of statewide concerns.

In the following sections, each of these issues will be discussed in more detail. They will be taken in the order listed above, with one exception. In order to provide some understanding of the regional component of these issues, we will discuss Issue #8 - The Need to Recognize Regional Differences, first.[5]

## Need to Recognize Alaska's Regional Differences

Alaska's solid waste concerns are first and foremost a function of the state's tremendous size, encompassing widely varying climatic and geographic features. Given that its small population is widely scattered over an immense land area - with communities connected to each other more often than not by air or waste transport - it is much more difficult to generalize about the solid waste issues facing Alaska communities than it is in states where communities are more similar. On one hand, many rural Alaska communities are still relying upon some of the most elemental solid waste management techniques found in the Pacific Northwest - including open burning and open dumping. Anchorage, on the other hand, has a state-of-the-art landfill and a program which could be a national model for household hazardous waste (HHW) segregation and disposal. Different demographic, governmental and economic characteristics define four distinct regions: Southcentral, Rural, Southwest and Southeast. After a brief introduction to the state, each of these regions will be discussed in more detail.

Policymakers outside Alaska often fail to appreciate its size and diversity, making it hard for them to fully comprehend the problems associated with distances in Alaska and the cost of transportation. Perceptions of the state are distorted by most maps of Alaska for, in an atlas where every U.S. state is given one page, the scale for the Alaska map is quite different than that used for other states. Thus, it seems appropriate to outline some of the differences in scale that exist between Alaska and the other Region 10 states:

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[5] The focus of this regional solid waste needs assessment has been on municipal solid waste. Clearly, each state in the region has other solid waste issues - issues likely to command more attention over time as federal regulations are developed to address the associated environmental issues they raise. In Alaska, there appear to be eight distinct solid waste streams apart from municipal solid waste: wastes associated with the oil and gas industry which is currently concentrated on the Kenai Peninsula and the North Slope; wastes generated by mining operations, other than camp wastes; timber industry wastes, including stockpiles of logs for which there is no market; asbestos insulation from old schools and buildings; waste generated by the Army Corps of Engineers from the clean-up of abandoned military sites; medical wastes; raw sewage septage and sewage sludge; and, foreign food wastes handled under APHIS regulations. Generally these waste streams are handled apart from the general flow of municipal solid waste, and thus, fall outside the scope of this regional assessment.

- Alaska covers an area almost two and a half times as large as Idaho, Oregon and Washington combined, with only 6.5 percent of the people. The North Slope Borough alone is larger than either Washington or Idaho.
- The Unorganized Borough (UOB) of Alaska - covering an area one and a half times as large as Washington, Oregon and Idaho combined - is an entity unique in the United States. It has no organized regional government (i.e. counties, parishes, etc.) and while there are over one hundred organized "cities" in the UOB, the largest has only 4,400 people and most have less than 1,000 people.
- The organized local governments in the Southcentral Alaska corridor, the "Railbelt" - from Fairbanks to the Kenai Peninsula, cover an area about two-thirds the size of Washington state.
- The Kenai Peninsula Borough, home to about 43,000 people, covers over 14,000 square miles - an area greater than the nine counties in the Idaho Panhandle.

Not surprisingly, given its size, Alaska communities experience extremes of climate: from parts of the Interior with frigid temperatures, rivers frozen for all but a few months a year and ground which is permanently frozen just a few feet below the surface, to the more moderate maritime climates of Southeast and Southwest Alaska. However, while these latter regions may have more moderate temperatures, they also tend to receive significant amounts of precipitation and have little topsoil, resulting in leachate problems; as well, they are mountainous with few suitable landfill sites. Communities in all parts of Alaska must contend with the fact that they are often located in wetlands - complicating both the practice and regulation of solid waste management. Those in Southwest Alaska and the Yukon Delta lack good local sources of cover material. And, some communities face seasonal flooding and high winds which disperses solid waste.

Further influencing solid waste management is the fact that, of Alaska's half million people, about twenty-five percent live in communities with no road access:

- some 3,000 people live in the Southcentral coastal communities of Whittier and Cordova;

- about 52,000 people live in rural Alaska - the North Slope, the Interior and the western areas;

- another 68,000 people live in Southeast Alaska (including Haines & Skagway which only have road access into Canada); and,

- finally, some 21,000 people live in the southwestern part of the state extending along the Aleutian Islands.

Altogether, 162 incorporated communities and 96 unincorporated ones do not have road access and must rely on air or water transport, including ocean-going ships and river barges. All Alaska transportation - both within the state and to/from the Lower 48 - is expensive because of the distances involved and the lack of economies of scale for transport operators.

The following four sections briefly describe the characteristics of each region, the current state of solid waste management, and the solid waste issues which are emerging there.

Southcentral Alaska - The Railbelt Seventy-five percent of Alaska's residents are concentrated in a corridor from the Kenai Peninsula to Fairbanks, along the road and railroad systems. Unlike other parts of Alaska, most of the communities in Southcentral are connected by both the road system and rail service. In 1987, Anchorage - the largest city in Alaska - opened a new state-of-the-art landfill. Both the Kenai Peninsula Borough and the Fairbanks North Star Borough are reported to be considering the need for new landfill sites. Solid waste management costs vary widely along this corridor. The Anchorage landfill has a tipping fee of $45 a ton, while the Kenai Peninsula Borough has four landfills with no tipping fee. With the exception of parts of Anchorage which have municipal collection services, collection in the organized parts of Southcentral Alaska is provided by private collection contractors and garbage is taken to the appropriate borough landfill.

Recycling services are provided in Anchorage through buy-back centers and a commercial recycling program operated by the Anchorage Recycling Center (ARC), which is owned by Alaska's largest collection company, Anchorage Refuse Company. When vans are available (currently, southbound vans are all committed to shipping oil spill clean-up wastes), ARC ships south between twenty and forty vans of materials a month. It ships under the auspices of Alaska Litter Prevention and Recycling Program (ALPAR), a non-profit group committed to litter control throughout Alaska. ALPAR has been able to negotiate with shippers for a favorable backhaul rate. ALPAR also works with airlines to have them carry out aluminum from rural areas to be recycled. Limited recycling by other communities in this region feeds materials into the Anchorage operation.

In Southcentral Alaska, solid waste planning and management conforms more closely with that being practiced in the rest of the country. There are local governments; there is a cash economy; and because of the concentration of population, there is both the need and the ability to pay for formal solid waste management programs. The boroughs in this corridor are wrestling with the full range of emerging solid waste issues - monitoring and remediation of closed landfills, siting of new facilities in the face of local opposition, exploring the trade-offs between charging the true cost of disposal and concern over illegal dumping, investigating methods to keep hazardous wastes out of MSW landfills, and debating the need for curbside recycling given the marketing problems associated with the cost of transportation and the currently declining prices for key recyclables such as paper.

Rural Alaska Generally that entire expanse of territory north, west, southwest and east of the Anchorage/Fairbanks road corridor is considered rural. There are also remote villages with rural characteristics on the Kenai Peninsula and in Southeast and Southwest Alaska. Many of these villages have their roots in one of the Native Alaska cultures. Because of the provisions of the Alaska Native Claims Settlement Act, these Native villages are not "Indian reservations" and the State has jurisdiction over their environmental regulation, though some services are provided through the Indian Health Service. [The Metlakatla Reservation, south of Ketchikan, is the only federally-recognized Indian Reservation in Alaska.]

The larger communities (2,000 to 4,000 people) may have some tax base, however they still have limited financial and technical resources to devote to solid waste management. The smaller villages are characterized by: small populations - most with under 500 people; a subsistence-based economy; no tax base; and, limited financial ability to maintain any complex system. The exception to this is the North Slope Borough, which through it property tax revenues from the Prudhoe Bay oil and gas complex, can afford to provide Barrow, and its seven villages, with heavy equipment and technical assistance in solid waste management. Rural communities are generally only accessible by air or boat and are not connected to each other or to regional centers by any year-round surface transportation. For those on the northern and western coasts of Alaska, as well as along the river systems, barge access is available only during the summer months, after the "break-up" of ice. Those living in areas of permafrost cannot dig proper landfills because the tundra turns to "gooey mud" when the top few feet thaw each summer.

The Indian Health Service and the state recommend creating landfills where feasible, though for many villages it is not. About three-quarters of the 209 native villages do not have permits for their landfills and the state does not attempt to literally enforce its standards or require permits. Many villages find a pond on the tundra - hopefully big enough to last for several years - and use that for waste disposal. Some communities have landfills which regularly put cover material over their wastes, but most do not. Some communities have both landfills and illegal dumping. Unlike communities of a similar size which may exist in other states, these rural Alaska communities cannot take advantage of nearby county or regional landfills. Over half of these villages rely on individuals to take trash to the dumps and, without collection services, community governments have less control over the waste stream.

A rural village is generally only able to provide funding for projects to the extent that it receives funds from the state government. Thus, to some extent, its priorities are set by the state legislature as it approves funding for various programs. Capital spending on solid waste competes with programs for water and sewer, as well as schools, airports and roads. Operating funds compete with the full range of services that are required in rural areas. In some communities individuals may have incomes, but mechanisms do not exist to get people to pay for services. One estimate indicates that $2 billion may be required to bring bush facilities up to lower 48 standards - about $38,000 per person.

A primary vehicle for assisting rural Alaska villages in planning for and providing solid waste services is the Alaska Department of Environmental Conservation's (ADEC) Village Safe Water (VSW) Program. VSW provides technical assistance, gives grants, oversees construction and provides technical support to operators of some water, sewer and solid waste projects in 220 villages. By working with communities on the planning, operational financing, and maintenance needs of a project, VSW is able to design and build projects which reflect the villages' needs and pocketbooks and which are technologically appropriate for remote areas. Not all state-funded rural projects are administered by VSW. Many have been direct grants to communities. Federal assistance can come in the form of U.S. Public Health Service or Indian Health Service projects as well. One reviewer noted that rural villages may not be able to afford landfill operators, or even to collect user fees, as the village governmental infrastructure weakens over time with decreasing levels of state support.

In rural Alaska, there is tacit acknowledgement on the part of the ADEC that current regulatory standards are not workable in these rural communities. Thus, the issues facing the state and these communities in their solid waste efforts are more basic:

- How do small isolated villages achieve any measure of sound solid waste management practice in a severe climate and a non-cash economy?
- Assuming there are alternate methods or improved methods of solid waste management, how is that information best communicated and those methods implemented?

In addition, there is no existing mechanism in the Unorganized Borough which would promote, where possible, the creation of regional solutions to solid waste disposal problems.

Southwest Alaska Southwest Alaska stretches from Dillingham and Bristol Bay southwestward onto the Aleutian Chain. This area includes the Bristol Bay Borough, the Kodiak Island Borough and the Aleutians East Borough, as well as the major port city of Unalaska (Dutch Harbor) which lies outside any borough boundary. None of these communities has road access. While similar in topography and climate to Southeast Alaska, Southwest communities are smaller and more distant from each other. Kodiak, the largest community in this area, has about 6,700 people and Unalaska is second largest with a full-time population of about 1,900.

A number of factors affect solid waste management in Southwest Alaska. Landfilling along the Alaska Peninsula and in the Aleutian Islands is complicated by heavy rains and snow which result in huge amounts of leachate generation. Suitable landfill sites are lacking because of the mountainous terrain. There is heavy competition for any available flat land between the siting demands of housing, business and other public facilities such as airports and roads.

While the communities in Southwest Alaska have small resident populations, their wastes represent the tip of the solid waste iceberg. These communities see the population swell during the peak fishing months which greatly increases the solid waste volume. Recently, the Coast Guard promulgated regulations implementing MARPOL, an international restriction on the ocean dumping of wastes, particularly plastic wastes.

Ports receiving ocean-going vessels are required to receive ship-board waste, and to dispose of it in a suitable way. The Coast Guard has the authority to close a port if it does not comply with these solid waste regulations. Though the full effect of MARPOL is not yet known, it has been estimated that its effect may be to give Unalaska, for example, the same solid waste volumes as a town many times its size.

The issue of foremost concern to communities in Southwest Alaska is how they can comply with the requirements of MARPOL. While the requirements of this treaty also affect Southeast Alaska communities, the impact is greater on the many Southwest ports which may have less of an existing solid waste infrastructure than their Southeastern counterparts.

The Southwest Alaska Municipal Conference is currently investigating the impacts of MARPOL regulation. Some observers have suggested that the Kodiak landfill may be considered as the site for a regional facility, while others have suggested siting a regional incinerator, or encouraging shipboard incineration with off-loading of ash for disposal. As there are three boroughs in this region, a framework exists for some coordination. However, one of the largest ports is Unalaska, which lies immediately west of the Aleutians East Borough and is in the Unorganized Borough.

The commercial fishing fleet is clearly a potential source of revenue which might be tapped in order to provide needed facilities, but once again this raises the issue of how to balance charging the full cost of disposal with the environmental costs resulting from illegal dumping. Furthermore, depending on the solid waste options selected by various communities, there may be economic reasons for fishermen to prefer one port to another for off-loading waste. Given the broad range of issues involved, there is a need for some recognized process to sort out the ramifications of MARPOL and the appropriate financial framework for achieving compliance.

Southeast Alaska Southeast Alaska is comprised of a string of islands and a narrow band of land forming British Columbia's northwestern border. It runs from Yakutat, Haines and Skagway on the north, south to Ketchikan and Prince of Wales Island. All intra-region transport in Southeast is by boat or plane, with the exception of a limited road network connecting four small communities on Prince of Wales Island. [There is road access through Haines and Skagway into the Yukon Territory. However, for all intents and purposes, no major community in Southeast Alaska has road access useful for regional solid waste management.]

About 68,000 people live in this area, with the numbers of "garbage generators" swelling in the summer months, due to weekly visits by large cruise ships as well as other tourists and fishermen. Southeast Alaska communities are likewise affected by the MARPOL regulations, requiring them to take the wastes from cruise ships and the Southeast Alaska fishing fleet.

As in Southwest Alaska, the climate and terrain of Southeast make land disposal problematic. Heavy precipitation generate large amounts of leachate and the lack of flat land makes siting landfills difficult. Bears and birds are found in abundance, and are naturally attracted to landfills creating both vector problems and safety hazards. [In fact the hazard may be more to the bears than to the people. Legislation passed last year prohibits shooting bears within a mile of a landfill - too many were being killed as they followed their natural inclination toward a free, but often fatal, lunch.]

Municipal solid waste is incinerated in some Southeast communities. Juneau is served by a privately-owned incinerator which is said to be nearing operational capacity. Sitka has a publicly-owned facility which produces steam for heating a nearby college. Ketchikan has received funds for construction of an incinerator, but is still relying upon an outmoded landfill. Smaller communities in Southeast practice open burning - sometimes on the shore below the high tide line. A number of people also noted that some illegal dumping is occurring directly into the various waterways in weighted bags; this practice has been traced to residents, fishing boats and tour ship operators.

Southeast and Southwest Alaska face similar planning issues. There are four borough governments in Southeast and about two dozen incorporated and unincorporated communities lying outside their boundaries. To the extent that regional solutions are necessary - encompassing all or parts of this area - there is no formal way to plan for those solutions or to implement them. MARPOL regulations provide an impetus for addressing these issues by increasing the waste volumes being handled. The Southeast Conference, a group of municipal officials and private sector interests, is beginning to discuss these issues and to explore the feasibility of cooperative ventures. In addition, decisions under consideration now by EPA concerning the proper disposal of MSW incinerator ash will affect Juneau, Sitka and Ketchikan. If the decision is made to consider that ash "hazardous" under RCRA, costs for ash disposal will increase greatly since Alaska has no legally permitted commercial hazardous waste disposal sites and ash may need to be shipped to facilities such as those in Oregon.

## Lower Priority in Competition for Funds

Solid waste management is given a lower priority than other needs in many Alaska communities. There appear to be three reasons for this: the presence of more immediate problems; the lack of awareness about environmental costs associated with current solid waste management practices; and the fact that, since the communities have such different solid waste concerns, there has been no homogeneity of interests which would raise the statewide profile of the issue.

In many Alaska communities where potable water supplies, basic sewage services and simply staying warm are everyday concerns, solid waste disposal is not given a high priority. Most rural Alaska communities are focussing on sewage and drinking water problems first. Since the need for improvement in these basic public services is still great in many parts of Alaska, rural communities are just beginning to address solid waste concerns. In fact, in many communities, solid waste is not seen as a problem at all, as there is no "capacity crunch." And, some communities are not even involved in providing solid waste services. These services are provided instead by the private sector.

The second reason for the relatively low profile of solid waste management as an environmental issue may be due to the fact that environmental effects from solid waste disposal generally occur over the long-term and are not readily apparent. Because there is a great deal of concern in Alaska over the impact of industrial facilities on the pristine environment of "The Last Frontier," these facilities are more likely to bear the costs of monitoring and compliance. As a result, more is known about their impacts. In contrast, little is known of the environmental costs associated with the current state of solid waste disposal practices - in part because neither the communities nor the state have the resources to monitor and analyze these impacts.

As the consumption habits in many Alaska communities are not dramatically different from those in the rest of the country, it is likely that Alaskans are disposing of plastics, cans, bottles, batteries, waste oil, and paints in their local landfills. In some cases, these wastes are burned on the beaches, dumped into the ocean, or landfilled in tundra ponds with no environmental protection. If the experience of communities in the Lower 48 serves as a guide - where too many landfills are now found on Superfund clean-up lists - it is likely that those Alaskans who are not paying the cost of preventing environmental damage (in terms of adequate landfill or incineration capacity) are most likely incurring environmental costs, the severity of which will only be known over time.

Finally, the solid waste issues in Alaska appear to be too diverse to generate statewide interest and thus, raise the overall profile of solid waste management. One observer with a statewide perspective noted that, because each Alaska community offers different solid waste services, they are likely to face different problems. As a result, each person is touching a different part of the elephant, and not recognizing the problem as a whole or thinking in terms of overall system solutions. However, a number of observers did note that there is a growing awareness of solid waste problems in some areas. For instance, while Southwest communities now see "garbage" as a moderately important local government issue, one observer predicted that within a decade, managing garbage will be seen as an extremely important issue. Currently however, other areas, such as hazardous waste management, are seen as more interesting and pressing environmental issues.

Another observer noted that most Alaskans would not consider solid waste management to be a problem, thus while people from outside the state may see a large number of issues emerging, those in the state may not. It was suggested that the biggest "problem" facing Alaska policymakers in convincing Alaskans that solid waste management is something that should be addressed and paid for.

## Relevance of National Standards to Alaska Conditions

In response to Congressional concern over past solid waste management practices, EPA has proposed, and is currently in the process of revising, new regulations intended to upgrade land disposal practices at all new or expanded MSW landfills in the nation. These regulations are authorized under RCRA Subtitle D. The proposed regulations would include requirements for daily cover, the lining of landfills, groundwater monitoring, leachate collection systems, and the development of closure plans, including a financial mechanism to insure the ability to pay closure costs for a thirty-year period. These proposed criteria raise the issue of the relevance of national standards to Alaska conditions. As one city official noted, it is a problem if regulations designed to protect the last 2 percent of Florida's wetlands are applied to Alaska which still has 99 percent of its wetlands left. This problem is further compounded if all the flat land in a community falls within the wetland designation.

In this context, it is important to first understand ADEC's current role in solid waste management. As in most states, local governments in Alaska have the responsibility for providing solid waste management, while ADEC enforces state regulations. ADEC administers the solid waste regulations which are found in 18 AAC 60 and issues permits for all MSW facilities. These regulations were last updated in September of 1987. ADEC has flexibility in a number of areas in administering these regulations to meet the unique conditions of Alaska communities. For instance, groundwater analysis and monitoring, remedial action and closure plans are required under Alaska law only if a community: 1) serves more than 2,000 people each day; 2) receives 5 or more tons per day; or 3) receives septage wastes that account for more than 10 percent of the tonnage received by the facility. Of the 151 incorporated Alaska communities, 130 have fewer than 2,000 people, though some of these may receive enough wastes from tour and fishing ships to put them over the 5 ton threshold. Thus, the majority of the communities are exempt from these more stringent regulations.

ADEC regulations also allow for landfill cover to be applied at varying frequencies depending on the size of the community and the daily amount of waste received. ADEC retains the discretion to require more or less frequent cover depending on waste composition, vector problems, etc. ADEC can also give waivers from some provisions of the regulations, if it can be shown that "because of unusual conditions, [the provision would] impose an unwarranted financial, technological, or safety burden on the applicant and does not provide commensurate benefit to the public health and welfare or protection of the environment." ADEC has 19.5 full-time equivalent staff working on solid waste issues, including industrial solid waste.

According to ADEC, about 740 landfills in the state should be permitted, but only half have applied for and been issued permits. Of the permitted landfills, just over one-third are for municipal solid waste; the remaining two-thirds are for use by military installations or industrial operators - mines, timber facilities, oil companies, etc. ADEC concentrates its efforts on the 20 largest landfills (those serving more than 2,000 people) and which receive about 95 percent of the state's municipal solid waste stream. In addition, ADEC also regulates MSW incinerators operating in Juneau, Sitka, Adak and Prudhoe Bay. Incineration standards are found in 18 AAC 50; ADEC permits are required for incinerators burning more than 1,000 pounds per hour. Controlled open burning is also regulated under 18 AAC 50.

In its comments on Subtitle D, ADEC distinguished between three types of Alaska communities: large communities, small communities on road systems and small, remote villages. ADEC then indicated to EPA that, whereas large communities would be likely to have some problems complying with the criteria, and the small communities on road systems might be "encouraged" by the criteria to form regional solid waste management systems, the small remote communities would not have the economic resources necessary to overcome their remoteness through a regional solution, or to meet the criteria within their own communities.

Obviously, national standards and enforcement practices have little relevance in many parts of Alaska. Less obvious is the form by which regulators can acknowledge this difference, and once that is addressed, what standards and/or enforcement practices are appropriate in order to reduce environmental costs of solid waste disposal in Alaska.

There are three possible regulatory approaches to this Alaska reality: formal recognition of the differences through a waiver and/or exemption from regulations; a de facto recognition of the differences through lack of enforcement; or, attempts to force compliance in spite of the wide gap between reality and the standards. The issue from a regulatory perspective is, at what point does an effort to enforce inappropriate standards become counterproductive and focus energy away from the necessary task of improving the prospects for environmentally-sound solid waste management?

Enforcement of MARPOL regulations does not raise this issue of regulatory relevance to the same degree, even though Alaska port communities have far different capabilities to deal with solid waste issues than port cities such as Seattle (WA) or Coos Bay (OR). There are two factors which distinguish this compliance issue from Subtitle D issues. Clearly, the Bering Sea fishing fleet and the cruise ships visiting Alaska ports are a significant part of the ocean traffic targeted by MARPOL. If international ocean dumping is to be curtailed at all, Alaska compliance is important. This is unlike the Subtitle D regulations which address land disposal problems more associated with large communities than those of the size found in most of Alaska. Second, the fishing boats and tour ships are both the source of the problem and a likely source of revenue for addressing the problem. In contrast, Subtitle D assumes an ability to pay on the part of the communities it is regulating, an ability which may be lacking in many Alaska villages.

## Limited Availability of Resources at Every Governmental Level

In Alaska, boroughs (roughly similar in function to counties in other states) and cities are given the authority to establish and operate solid waste collection and disposal facilities. In Alaska, there are 13 Organized Boroughs which cover 203,380 square miles. They range in size from the Bristol Bay Borough with 1,297 people to the City and Borough of Anchorage with 246,139 people. Boroughs may either operate solid waste facilities themselves or contract to a private firm.

Alaska is unique, however, in that a large portion of its land area is not under the jurisdiction of any local government; as noted earlier, this area is called the Unorganized Borough. There are also 148 incorporated cities in Alaska and another 128 unincorporated ones; of these 276 communities, 193 of them are in the UOB. Boroughs can be formed under Alaska law by vote of the people, but only a few areas in the UOB have decided recently to organize. While a new borough was formed in 1986, and another in 1987, they were the first to form since 1972. Within the UOB, an organized city provides services for itself. However, as most of the organized cities in the UOB have small populations, solid waste services are rudimentary at best. If a "service area" is deemed needed within the UOB, it must be established by the state legislature. To date, this has occurred only to meet the need for local school districts and coastal zone management planning areas.

The ability of the State to promote solid waste management is a function of resources - both at the state and local levels. Compliance with regulation of any sort costs money and, in effect, raises the fixed costs of government. In turn, this requires (absent an ever-flowing Prudhoe Bay and high oil prices) a sufficiently large population over which to spread the costs in order for them to be affordable. As noted earlier, ADEC has limited staff in the area of solid waste, as do local communities. Even two of Alaska's larger communities - the City of Ketchikan and the Ketchikan Gateway Borough with about 13,000 people - have had to make hard decisions about whether to direct recent capital spending toward improving drinking water supplies or upgrading solid waste management. Not surprisingly, the immediate drinking water concerns came before solid waste management concerns - though the latter are now being addressed. Thus, it becomes necessary to maintain a certain sense of basic priorities and fiscal reality regarding the pace of funding for improved solid waste management services in Alaska.

Complicating solid waste management is the potential for citizen suits under RCRA to enforce solid waste regulations. Such suits may be filed by public interest groups or by individuals wanting full compliance with the regulations. In some cases, such suits might be brought by private disposal companies looking for a way of insuring a market for their services - a market which would otherwise be served by inadequate facilities or illegal dumping. Such suits would stretch resources at all levels and involve a reshuffling of priorities.

## Industry Regulation in a Changing Environment

Solid waste services throughout the country are either provided by local government or private industry. At one end of this continuum are municipally-owned and operated collection and disposal facilities, while at the other end these services are provided solely by private industry. Generally, communities adopt some mix of public and private provision of services. An integral part of providing these services is often some agreement as to collection service areas which are then franchised by government on a periodic basis to private collection contractors who deliver the services. This is based on the notion that it is probably cheaper to have one truck serve a subdivision, for instance, than to have many trucks from many firms competing for business in the same area. Usually, in return for an agreement on the division of service areas, there is also public regulation of what a company may charge its customers.

In 46 of the 50 states, the regulatory authority for establishing service areas and rates falls to counties. The counties then issue franchises to hauling firms operating within their boundaries. In Alaska, this type of regulation is done at the state level by the Alaska Public Utilities Commission (APUC). APUC issues certificates which define each collection contractor's service area. If the collection contractor has revenues in excess of $200,000 a year, APUC also regulates the rates it charges. There are 43 certificated collection contractors in Alaska, nine of which are rate regulated. Municipally-owned collection systems are not subject to regulation, nor does APUC regulate the operation or rates charged by municipal or private disposal (either landfill or incineration) operations.

APUC has in the past urged the legislature to eliminate solid waste utilities from its jurisdiction because of the amount of effort required to regulate them. The refuse hauling industry is the smallest of the six industries regulated by APUC and accounts for 3.5 percent of the total revenues of its regulated utilities. In lieu of deregulation, APUC has proposed expanding its scope to include disposal facilities, so that it can more effectively regulate jointly-owned disposal and collection operations.

In Alaska, the changes affecting solid waste management are also raising issues regarding industry regulation. Specifically, is the current framework flexible enough to meet the varying needs of Alaska communities, and how is the public's interest in the level of disposal rates best represented in a regulatory context?

APUC regulation affects the flexibility of the industry to meet changing conditions by deterring the entry of new collection contractors and by possibly discouraging the development of a separate recycling industry. Boroughs have been pushing for deregulation of the industry, and had hoped that APUC authority over refuse collection contractors would have been allowed to "sunset" when the opportunity recently arose. "Sunseting" APUC authority over the collection contractors would have allowed boroughs to encourage new collection contractors to enter the industry in their jurisdictions, as they saw fit.

APUC regulation also affects the recycling side of the industry. Solid waste collection contractors generally favor state regulation as opposed to no regulation or regulation by the boroughs. In return for continued regulation, the collection contractors have offered to "subsidize" recycling by committing to spend a certain amount of their revenues on recycling services. They argue that because recycling is so expensive to provide in Alaska, it must be included in the overall garbage collection service and, as such, reflected in the garbage collection rates. Or, in their terms, garbage collection would "subsidize" recycling.

For reasons discussed in the next section, the current prospects of large volume recycling in Alaska are limited. However, to the extent that recycling may be considered a part of the overall solid waste management picture in the long-term, the collection contractors' proposed arrangement raises the issue of how and by whom is recycling best accomplished: should recycling be provided by collection contractors; by the development of a separate industry; or, as a local government program? The question of how to encourage recycling and who should provide this service is as much a question of solid waste management as it is of regulation.

The second issue raised by this changing environment concerns disposal rates. In the past, the major costs associated with solid waste management were the costs of moving waste from one place to another. Hence, these costs became the regulatory focus. In the future, the cost of environmental compliance is likely to mean that disposal costs will make up an ever increasing portion of the overall cost of garbage service. In addition to raising day to day operating costs, Subtitle D requires the owner/operators of landfills to estimate the costs associated with closing and maintaining the landfill for a period of 30 years. Then, they must assure through some financial instrument the wherewithal to meet those cost obligations.

Assuming that some additional private disposal operations are started in Alaska, to whom will it fall to insure that firms are charging enough to cover these future closure costs? Or to insure that disposal companies are not over-charging collection contractors - and hence the public - on the pretext of meeting the financial criteria? For those communities served by private disposal operations, there will be no regulation as to how, and when, those costs are passed on to the customer. This will be a particular problem wherever both the hauling and the disposal operations are found under one corporate roof. [Municipally-owned landfills must also comply with these financial assurance requirements - and thus, local governments will also face this question of how, and when, will these costs be passed on to the customer.] One municipal reviewer noted that his community is studying whether the complexity of solid waste regulations may be moving beyond the capability of the private sector to address.

## Economic Reality of Alaska Recycling

Generically, the economics of profit-oriented recycling are a function of the market value of the recycled material, less the cost of diverting the material from the solid waste stream and transporting it to market. A community's interest in recycling is somewhat different, for the "value" of recycling lies in its ability to help a community avoid disposal costs or preserve landfill capacity, as well as to conserve natural resources and protect the environment.

Few commodities in Alaska can be recycled profitably. In addition, it appears that few Alaska communities are facing a disposal capacity "crunch" severe enough for them to have to subsidize recycling to reduce disposal volumes and thus preserve capacity. Aluminum cans and scrap metals are currently worth the cost of collecting (and, in some cases, buying) and shipping south. For other commodities with declining market values, the cost of transportation overwhelms the market value of the product. (It is expected that, by this fall, some grades of paper will have no value in the Seattle market and, thus, will not even contribute to covering their own transportation costs.)

Recycling is often seen as the "right thing to do." However, the economics of recycling in Alaska make recycling driven exclusively by the profit motive on resale of the recyclable possible for only a limited portion of the waste stream. The fact that many communities do not currently have any sort of tipping fee at the landfill means that individuals do not feel any financial incentive to recycle. "Avoided" costs of disposal are not an incentive in communities which have landfills with long remaining lives. Some sources noted the generalized "usefulness" of mandatory recycling or curbside recycling in the cities. However, unless there are markets or subsidies for these products, such efforts merely segregate the wastes for a time, leaving them in storage indefinitely or forcing them to take a circuitous route to the same eventual disposal destination - the landfill or incinerator. Nonetheless, many communities support a growing public interest in recycling because they recognize the importance of changing people's attitudes about the amount of waste they generate, and see a commitment to recycling as a sound step in the process of transforming Alaska's waste management practices.

## Special Wastes

Municipal solid waste includes, by definition, HHW and conditionally-exempt small quantity generator (CESQG) wastes; these wastes include old paint, various household chemicals, waste oil, etc. In Alaska, the disposal of these wastes poses a serious problem for many communities. Climate and terrain may result in the production of more of these wastes - dusty roads may lead to more oil changes, freezing conditions may render poorly stored paints unusable, etc. And to the extent that inadequate solid waste management may create long-term environmental and public health concerns, poor handling of waste oils and household chemicals may result in more immediate problems. In addition, the collection and handling of segregated HHW is very expensive, since Alaska also does not have a permitted disposal site for hazardous wastes in the state. All wastes must be shipped to facilities in Washington and Oregon. The issue raised by these special wastes is whether the problems they cause should be addressed separately from the overall solid waste issue, or whether solutions are best found within the context of upgrading MSW management practices overall.

ADEC has sponsored HHW clean-up days for various communities. In addition, Anchorage has developed a program of receiving household and CESQG wastes on a regular basis at its transfer station and at its landfill. These wastes are carefully segregated, temporarily stored, and sent south for treatment or disposal. The program is funded by customer payments, through the landfill fee and through the water utility. The issue for many Alaska communities is the extent to which they can afford to adopt the Anchorage model.

## Planning Vacuum

As has been noted many times, one of the major effects of tightening environmental regulation of disposal facilities is that the fixed costs of operating the facilities go up. As fixed costs go up, disposal facilities may need to draw from a larger population base to generate the revenues for improvements or to keep garbage rates at a level which people may be willing to pay. Because so many Alaska communities lie in the UOB, there is a governmental vacuum to foster these regional planning efforts in solid waste.

This vacuum is particularly noticeable as communities in both Southeast and Southwest Alaska seek to comply with MARPOL.

To the extent that regional solutions might be feasible from a cost point of view in the UOB - notably along the road system in the Copper River valley, in Southeast Alaska, or parts of Southwest Alaska, there is no planning authority to work with the communities to develop a facility or to help them respond to private sector proposals for solid waste facilities. For example, is it sufficient for facilities to be sited solely in accordance with ADEC standards or should there be additional constraints or input from the local residents? If local input or oversight is desired, how can this be achieved in the absence of a local/regional planning or regulatory body?

In Southeast Alaska, elements of the private sector have indicated a desire to fashion a regional solid waste solution for smaller communities. What is not clear is how these efforts might enhance, foreclose or conflict with other options undertaken by the boroughs. As the landfills in these communities may be expected to comply with Subtitle D criteria (when promulgated) and incinerators may be expected to comply with the growing range of regulations on burning MSW and subsequent ash disposal, some sort of overall planning - and accountability - may need to be in place before the initiation of long-term projects. The Southeast Conference is beginning to explore this possibility. Planning in Southeast Alaska is also complicated by the fact that various communities are achieving different standards of environmental compliance, due in part to different disposal technologies and differing abilities to finance improved solid waste facilities. Complicating planning is the lack of a statewide forum to bring together people facing solid waste problems, to exchange information about what "works" under Alaska conditions.

## Interview List for the Alaska Profile

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| Christine Benson | Alaska Center for the Environment | Anchorage |
| Kay Brown | Alaska State Representative | Anchorage |
| Scott Burgess | Alaska Municipal League | Juneau |
| McKie Campbell | Assemblyman | Juneau |
| Sky Carver | Peninsula Sanitation | Soldotna |
| Steve Corp | Alaska Indian Health Service | Anchorage |
| Bettye Fahrenkamp | Alaska State Senator | Fairbanks |
| Bob Higgins | Ketchikan Pulp | Ketchikan |
| Larry Kimball | Alaska Federation of Natives | Anchorage |
| Susan Knowles | APUC | Anchorage |
| Audrey Lee | AK Litter Prevention & Recycling | Anchorage |
| John Levy | SW Alaska Municipal Conference | Anchorage |
| Chris Mello | North Slope Borough | Barrow |
| Curt Menard | Alaska State Representative | Wasilla |
| Eric Meyers | Leg. Asst. to Rep. Kay Brown | Anchorage |
| Jack Pierson | Acting City Manager, Ketchikan | Ketchikan |
| Pat Redmond | Anchorage League of Women Voters | Anchorage |
| Kevin Ritchie | City Manager | Juneau |
| Jim Sweeney | Anchorage Solid Waste | Anchorage |
| Shorty Tonsgard | Channel Sanitation | Juneau |
| Tom Turner | Anchorage Recycling Center | Anchorage |
| David Wigglesworth | Alaska Health Project | Anchorage |

## VI. IDAHO PROFILE

### Preliminary Observations

We have identified eight major issues facing Idaho with respect to its management of municipal solid waste. These issues are briefly summarized below and then each issue is explored in greater detail.

1. Solid Waste Disposal Seen as a Low Cost Government Service Solid waste management in Idaho today reflects the long-standing practice of providing a government service at very little cost to the citizen. However, with solid waste regulations becoming more stringent, it will become increasingly difficult for communities to provide the mandated higher level of environmental protection without significantly raising the costs of solid waste disposal. Thus, Idaho cities and counties face three challenges:

- How to raise the profile of the issue so that citizens understand the environmental costs of inadequate solid waste management;
- How to "pay the bill" for better solid waste management; and,
- How to prevent illegal dumping which may be an outgrowth of higher disposal costs.

2. Recognized Need for More Stringent Environmental Standards Appropriate for Local Conditions Idaho's regulations on solid waste management were promulgated in the early 1970's and consequently, do not adequately reflect the current understanding of the environmental risks of solid waste management. Expected implementation of the proposed Subtitle D criteria (Subtitle D) is providing an impetus for the state to reevaluate its current regulations. Idahoans are concerned that more stringent environmental standards contain some flexibility so that population, climate and geology can be factored into how a community complies with the regulations.

3. Environmental Impact of Landfill Closures Prior to the effective date of Subtitle D, many local governments and private operators in Idaho are expected to close their MSW landfills rather than incur the costs of compliance. Of the approximately 140 landfills now in operation, it is estimated that between 80 and 100 may close. State and local officials are concerned that current regulations governing closure provide inadequate environmental protection. Improperly closed landfills could eventually leak,

causing ground water contamination and future liability for landfill owners. (Nationally, about one-quarter of the Superfund sites are MSW landfills). Although closing out a landfill using the current best professional judgement may be in the public's interest, it may be difficult to do so, short of the formal process of issuing new regulations. Communities are caught between the regulations and their responsibility "to protect" the public interest. In addition, there is no existing mechanism to determine the adequacy of existing landfills.

4. Uncertain Enforcement Roles under Current Structure Solid waste is governed by a multi-tiered process for regulation involving individual counties, the local District Health Departments and the Department of Health and Welfare's Division of Environmental Quality (IDEQ). The mechanics of these working relationships are outlined in a Memorandum of Understanding between all parties. The Health Districts have primary responsibility for enforcing regulations governing landfill operation; about half the landfills in the state are County-owned and/or operated. However, since the counties fund the Health Districts, they are in the awkward position of enforcing against their funding sources. While this system appears to have worked well in the past, the increasing costs of compliance may strain the system's ability to insure compliance in the future. Also, more private landfills may further complicate local enforcement, particularly if the host county receives significant host fees. Discussions are underway between all parties to clarify enforcement responsibilities, and to provide all regulators access to appropriate resources for enforcement.

5. Regional Planning Many areas in Idaho are beginning to consider regional planning to address some of their needs for solid waste management facilities because of the:

- escalating costs for solid waste management systems, which may stress the independent financial capabilities of many counties; and,

- the decreasing supply of available landfills, because of landfill closures and Bureau of Land Management (BLM) restrictions on leasing its land for landfills.

IDEQ has convened a statewide Solid Waste Advisory Committee (SWAC) to discuss how to respond to Subtitle D. Several regional SWACs are also meeting under the auspices of the local Health Districts. House Bill 216, introduced last session, would have legislated these planning activities and would also have required counties to develop solid waste management plans, and encouraged them to develop plans with one or more other counties (though it does not require cities to plan in conjunction with their county). Many feel that in the upcoming legislative session, re-introduction of H.B. 216 will launch the discussion on these planning issues, as well as other issues not covered in that bill. Regional planning is complicated by two factors - the presence of Indian reservations which may or may not choose to participate in a planning process and the growing reliance on privately owned and operated facilities which function outside the governmental planning framework.

6. Emerging Debate about Recycling Although waste reduction and recycling can be an important element in solid waste management systems, Idaho has, so far, placed a low priority on these management options, in part because of: a lack of public concern over solid waste issues; low solid waste disposal costs which provide little economic incentive to reduce disposal volumes; and, the limited economic potential of recycling because of the distance to markets for recyclable materials. Efforts are underway in the state, however, to elevate recycling in the public's eye and to improve the recycling network. For instance, H.B. 216 would have required jurisdictions of over 4,000 people to give residents the opportunity to participate in a program for the collection of recyclable materials and also would have required jurisdictions to submit recycling reports, detailing how they are providing the "Opportunity to Recycle". While this provision was seen as controversial and did not pass the legislature, it indicates how far some would like to see recycling go in Idaho.

7. Out-of-State Wastes Coming into Idaho for Disposal Because of regulatory differences between Idaho and the surrounding states, the cost to dump solid waste in some parts of Idaho is much less than in Washington and Oregon. This encourages some collection companies to bring wastes across the border in search of cheap, legal dumping areas. In addition, illegal dumping has been occurring with greater frequency because the higher costs of disposal in the surrounding states make Idaho's rural areas and its vast amount of federally-owned land seem even more attractive as an illegal solid waste disposal alternative.

8. Idaho's Ability to Manage Change Hampered by Insufficient Planning Resources Every aspect of solid waste management in Idaho is undergoing change. Subtitle D would cause counties to upgrade their disposal facilities, close them or combine them - no county is likely to have the option of doing nothing. If some form of recycling legislation is ever approved, cities and counties will need to learn about a whole new aspect of solid waste management. Yet cities and counties are already constrained by a ceiling on tax increases. The enforcement structure is likely to be clarified yet it will face new challenges as regulations become more complex and the cost of compliance escalates. All counties will have to figure out how to pay for better solid waste

management. However, neither IDEQ, the local Health Districts, nor the cities or counties have the staff or funding to manage this change. Thus decisions are being made, with long term implications, without the desired level of expertise involved in developing options and priorities.

## Solid Waste Collection Seen as a Low Cost Governmental Service

Historically, most people in Idaho, particularly in the rural areas, have not had to pay very much for refuse disposal. Many citizens view solid waste disposal as their "right" and feel that it should be free or very cheap. Thus, Idaho's cities and counties face three problems as the need for better solid waste management grows: overcoming this perception; finding a politically acceptable way to raise money for environmental compliance; and, preventing illegal dumping.

The responsibility for the day-to-day management of solid waste lies at the local level. County commissioners are given the responsibility of providing solid waste management services to the residents of their respective counties. Idaho Code § 31-4402 gives county commissioners the authority to acquire, establish, maintain and operate such solid waste disposal systems as are necessary and to provide convenient access for county residents. Under § 31-4403, the county commissioners may provide the services through the county's own employees, through contract with or franchise to private companies, through another unit of government, or through a combination of these methods. Of approximately 140 landfills in the state, about seventy are county owned and/or operated.

Idaho Code § 50-344 gives cities the power to maintain and operate solid waste collection systems. Cities may have their own employees operate equipment and facilities, or they may choose to contract or franchise their solid waste management system. A city may also contract with another unit of government to provide solid waste maintenance and operation of facilities. Most cities in Idaho provide for collection of solid waste within their boundaries and use the county's landfill. Residents in unincorporated areas of a county are usually responsible for transporting their wastes to the landfill or to drop boxes (otherwise known as Greenboxes) located throughout the county.

Many of the people interviewed in Idaho felt that there was a real lack of understanding and public awareness about solid waste problems. Some suggested that it was a function of the low costs of disposal and the low priority given to solid waste in many counties.

Some local officials do not even believe that EPA will actually expect them to comply with Subtitle D. The proposed criteria would require landfills to be designed, operated, maintained and closed in accord with stringent environmental standards. As there is no perceived solid waste "capacity crisis" in Idaho and as the county governments have so many other priorities and responsibilities, it is hard for them to place much emphasis on solid waste disposal and recycling. Solid waste is in their peripheral vision, but it has not become their focus.

Thus, finding the financial wherewithal to develop and maintain a solid waste system that adequately protects the environment is a major challenge for many Idaho counties. There is a limit on county taxing authority which means that some jurisdictions will need to collect for higher solid waste management costs separately through user fees. Any increase in fees or tax assessments is likely to stir a negative public reaction. In Bannock County, some residents were concerned about a recent increase in the solid waste tax assessment to $18 a year - which is a monthly cost in many jurisdictions which have upgraded their facilities. Furthermore, charging a tipping fee requires restricting access to a landfill so that free dumping does not happen in the off-hours. A major debate in some counties is whether or not to put a lock on the gate at the landfill. Some local officials believe that people will dump their trash at the gate or elsewhere if they find the landfill closed. Yet, a monitored landfill is the only way to enforce tipping fees and screen what goes into the landfill.

With increasing tipping fees at landfills, many local Health Districts fear that there will also be a rise in illegal dumping - the random discharge of trash along roadsides and uninhabited areas. These dumps, if left alone, can be both harmful to the environment as well as unsightly. Preventing people from dumping illegally and cleaning up these areas is quite costly. The inability to enforce against illegal dumping is related to the resources and financial capabilities of a local government. It also requires educational efforts to inform citizens of the adverse impacts these dumps have on the environment.

## Need for More Stringent Environmental Standards Appropriate for Local Conditions

Idaho's regulatory framework for solid waste management is being scrutinized in terms of its ability to accommodate a new generation of solid waste practices. Idaho's current regulations were promulgated in the early 1970's, but in the years since there has been a much greater understanding of the potential risks associated with solid waste management. The fact that existing Idaho code has not kept pace with this environmental understanding has been recognized at various levels throughout Idaho's solid waste regulatory structure. Several observers indicated, however, that Idaho prefers to wait for the promulgation of Subtitle D regulations, rather than enact state laws which may then be amended when the federal regulations also come into force.

In the meantime, several of the Health Districts are using Washington's Minimum Functional Standards (MFS) as a reference document in closing out landfills and opening new ones. The Washington Standards approximate the new requirements being proposed under Subtitle D. Kootenai County, on the Idaho/Washington border east of Spokane, has officially adopted the MFS by resolution for the operation of its new landfill.

Many local governments do not know what to expect from the federal regulations and are anxious to see them promulgated. Many local governments also feel that because of the anticipated high cost of implementation, they will need state and/or federal resources to help them meet the criteria.

While recognizing the need for a more adequate regulatory framework for solid waste management, many of those interviewed also indicated their concern over the need for flexibility in federal regulations, principally because of differences in climate and population. Many local governments feel that there should be room in the criteria for the states to make "judgement calls" as to what standards are required under various conditions. For example, about twelve landfills in the state handle close to ninety percent of the solid waste disposed in Idaho. These landfills will probably be able to raise the financial resources necessary to comply with Subtitle D because they are located in the more populated areas. For the remaining landfills, which are located in rural areas and serve small populations, some of those interviewed feel that it should be left up to the state to determine what criteria have to be met.

Population both determines the amount of solid waste generated and the resources available to manage it in an appropriate way. Recent U.S. Census data indicate that, of all the fifty states, Idaho has the lowest portion of its population living in metropolitan areas. Idaho encompasses an area of 82,412 square miles with a population of 1,002,500 people. In comparison, King County (WA), has 35 percent more people in 2.5 percent of the land area. Of the 44 counties in Idaho, 21 have fewer than 10,000 people and another nine have fewer than 20,000 people. All but two Idaho counties have population densities under 100 people per square mile. Counties with small, scattered populations face two obstacles to improving solid waste management: too few people to pay the higher fixed costs associated with better environmental protection at the landfill; and, the difficulties of providing recycling services to a widely scattered population.

Flexibility in the regulations is also seen as important because of the great variation in climate throughout the state. In the southern parts of Idaho, the climate is semi-arid, getting as little as six inches of precipitation; while the northern part and the higher mountain regions may receive as much as one hundred inches of precipitation per year. The amount of precipitation an area receives has a bearing on the way the landfill is designed and managed. Areas with a higher annual rainfall are likely to incur higher costs for managing leachate. Compounding climatic differences is the variation in underlying geology between northern and southern Idaho. Southern Idaho is covered with large regions of basalt with little clay whereas the opposite is true in northern Idaho. Clay is less permeable, thus it reduces the risks of groundwater contamination from landfilling in those parts of northern Idaho.

Currently, EPA is proposing that landfills be in compliance with most of the regulations within eighteen months from the promulgation of the final rule, and within five years for groundwater monitoring. One observer noted that the eighteen month deadline should be extended to reflect diverse rural conditions, using a formula based on population and/or climate.

## Environmental Impact of Landfill Closures

Counties in Idaho are now considering what impact Subtitle D may have on their solid waste management programs. Not only will these regulations dictate stiffer operating procedures, they also will probably contain more stringent closure procedures including the requirement that landfill owners/operators demonstrate the financial ability to monitor a landfill for thirty years after closure. It is estimated that many local governments and private operators will have difficulty meeting these financial requirements. Currently, the proposed regulations regarding closure do not go into effect until eighteen months after the regulations are actually adopted, which is expected sometime in 1990. In effect, this creates a window of opportunity in which many landfill operators may choose to avoid compliance by closing their landfills. Approximately 140 landfills are currently in operation statewide. Over the next year and a half, the majority of these landfills, perhaps as many as 80 to 100 of the relatively small sites, are expected to close.

Given this prospect of so many landfills closing, many of the people interviewed expressed concern that the procedures which are used for these closures might be inadequate to protect the environment. The technical and environmental considerations that form the basis of Idaho's current closure regulations are almost twenty years old. IDEQ is not sure if it can mandate closure requirements stricter than the current regulations, and is awaiting an opinion from the Attorney General's office on this question. However, unless local governments impose more stringent environmental standards than the current regulations require, they may not be fulfilling their obligation to conduct the affairs of government with "reasonable care".

The state SWAC's Technical Committee has been discussing how to achieve the maximum amount of cost effective environmental protection when closing out landfills. In anticipation of the onslaught of applications for landfill closures, the Technical Committee is currently considering closure criteria and reviewing the landfill closure permit application forms to be used by the counties.

However, even if stricter closure requirements are imposed, how will local governments incorporate the additional costs into their current budgets - budgets likely to be strained anyway by efforts to improve current solid waste management practices? This issue has yet to be addressed.

## Uncertain Enforcement Roles Under Current Structure

Currently, the enforcement roles of the two agencies involved in solid waste regulation, the IDEQ and the Health Districts, are undergoing a process of clarification in an attempt to make them more responsive to changing conditions. The Health Districts monitor and enforce the laws for solid waste management in the counties, and IDEQ promulgates the regulations. Although the two entities operate under a Memorandum of Understanding (MOU), some confusion and ambiguity exists as to exactly what responsibilities each organization holds. This ambiguity is especially true concerning legal actions. Under the MOU, no specific procedure is outlined for determining how violations should be enforced.

Health Districts were established by the legislature in 1972 under § 39-408 of the Idaho Code. The districts are operated and recognized not as state agencies or departments, but as governmental entities similar to single purpose districts. They are charged to administer and to enforce all state and district health laws, regulations and standards. Generally, Health Districts fulfill their responsibilities by acting as facilitators in working on enforcement issues with the counties, rather than as regulators. The Health Districts are responsible for moving Idaho forward over the last decade and a half in terms of solid waste management, while the state has been absent from involvement in these issues.

The state is divided into seven Health Districts; each district encompasses between five and eight counties. The largest district, District #4, includes Boise and serves 225,800 people. The smallest, District #2 is in North Central Idaho and services 91,000 people. The counties contribute a portion of the operating budget for its Health District. Potentially, this funding connection could cause the health district to enforce regulations against a county that is determining what its budget will be. While such a framework has proved workable in the past, it is likely to be subject to much greater strains in the future as landfills become larger; serve the needs of many jurisdictions; and, as compliance takes a much bigger financial "bite" out of communities.

Recently, representatives of IDEQ and several Health District officers met to reevaluate the MOU. They are attempting to determine what aspects of their relationship are best addressed in a MOU and what aspects should be addressed in legislation. A working draft of a revised MOU clarifies their roles in enforcement, permitting, technical assistance, and the development of regional and statewide plans. Under this draft, the Health District is responsible for providing education and technical expertise to local governments, as well as the local enforcement. Permits will also be issued by the Health District, after it evaluates the site and reviews the application for compliance. IDEQ would be the liaison on national issues, act as clearinghouse for information, provide support and training to the Health Districts, review and approve permits to ensure statewide consistency, provide a mechanism for legal review and consultation, and develop and coordinate statewide education campaigns. This working draft is now under review by the state SWAC, IDEQ and the Health District Directors. Should these roles be adopted, it would mean a significant clarification of the responsibilities governing solid waste management in Idaho.

As landfill operators make decisions about closing or upgrading their facilities, an important factor in that decision-making process is an understanding of how enforcement will be handled under Subtitle D. Public and private operators have expressed concern that landfills will choose to close prior to Subtitle D, only to subsequently find that no enforcement occurred and they might have stayed open. Or, they may find that enforced upgrading of facilities was not pursued equally at all facilities. It appears that communities may be making important solid waste management decisions on the basis of "second-guessing" enforcement policies.

## Regional Planning

A more regional, multi-county, approach to solid waste management is being driven in Idaho by higher operating costs and fewer landfill sites. Regionalization will, in turn, raise other issues including siting, transportation and coordination. The higher costs associated with Subtitle D compliance, and the likelihood of landfill closures were discussed earlier. In addition, the problem of landfill availability is exacerbated by changes in BLM policy. Many municipally-run landfills are operated on government-owned land. Approximately one-half of Idaho's publicly and privately owned landfills are operated on lands administered by BLM, the U.S. Forest Service, or the Idaho Department of Lands.

The federal Recreation and Public Purposes Act of 1926 allows BLM to lease or sell land to local governments for less than fair market prices. As a result, BLM has leased lands to local governments in the past for the operation of public facilities. A number of local governments now operate landfills on these leased, publicly-owned, lands (approximately 55 landfills on BLM lands). In the 1926 Act, a reversion clause allowed local governments to walk away from leased land for whatever reason, and BLM had to then resume management of it. Due to this clause, BLM now owns many abandoned or closed landfills. As a result, BLM has decided that it no longer will lease lands for landfills to local governments. Last year, Congress amended the law and removed the reversion clause. Consequently, landfills that are currently in operation will either be closed down by BLM or sold to the local government at less than fair market price. Hence, BLM will still sell land to governments for landfills, but they will no longer lease it for those purposes.

In Idaho, the Health Districts (which are, as noted earlier, multi-county entities) provide an excellent forum to help counties work with each other in solid waste problems. Many of the districts have already formed Solid Waste Advisory Committees to discuss multi-county disposal facilities. Current law allows counties to maintain and operate solid waste disposal systems jointly with another county, so the legal structure is already in place to address these issues in a broader framework. H.B. 216, expected to be reintroduced in the coming legislative session, would also require counties to develop solid waste management plans and encourages two or more counties to develop joint plans. However, as one observer noted, H.B. 216 does not require cities and counties to work together, creating the potential for splitting the waste stream.

Along with sanitary landfills, some areas of the state may consider use of regional resource recovery facilities. At the present, the only MSW incinerator in the state is in

Cassia County. It is located next to a potato processing plant and provides steam to the facility (about 10 percent of its energy needs). Elsewhere in the state, MSW incinerators have been considered but the population base does not generate enough waste to justify the large capital costs involved. It is unclear whether larger, more regional facilities will change the economics of incineration as a potential disposal option for Idaho jurisdictions.

While regional landfills are being considered as a possible answer to rising costs of compliance, such facilities may prompt other concerns. One reviewer noted that the IDEQ does not have a siting process outlined for such facilities. (H.B. 216, which was not a comprehensive solid waste management bill, did not propose one.) Compounding siting issues will be problems associated with longer trucking distances for solid waste as landfills consolidate. One other factor which will influence regional planning is the presence of a number of Indian reservations throughout Idaho. Currently, the state and counties are planning for solid waste independently (in many cases) of the Indian Tribes. (The issues surrounding county/tribal interactions are discussed more fully in the separate discussion of tribal solid waste concerns.)

The framework for conducting these regional discussions is currently ad hoc in Idaho. Consideration of how these types of negotiations can and should occur - and how the public can participate in them - will be an important topic of debate in the near future.

## Emerging Debate about Recycling

Idaho's rural nature makes it difficult to place much reliance on waste reduction and recycling as a main element in a solid waste system. Waste reduction involves changing people's behavior and changing various mass-market packaging strategies. Idaho has some influence over the former through educational programs and the like, while it has no influence over the latter because of its small size in comparison to the national consumer mass market.

To date, no concerted efforts have been made to develop markets within the state or to encourage industries that use recyclable materials to locate within the state. With low or non-existent tipping fees at their landfills, little monetary incentive exists for people in Idaho to recycle. Idaho also does not have a "bottle bill" which provides an economic incentive to recycle bottles and cans. Furthermore, no capacity "crisis" exists in the state of the sort that typically encourages increased recycling. The costs of transporting recyclable materials great distances may exceed the price received on the market. This may mean that in Idaho, recycling will not "pay" for itself. Achieving higher participation rates by both consumers and industry means that local governments will probably have to consider subsidizing recycling programs. Since many local governments have limited budgets, it may be difficult for these governments to develop such programs.

Many discussions are currently taking place in order to determine the best way for Idaho's larger communities to develop recycling programs. Boise is looking at the feasibility of curbside recycling and it may discuss recycling opportunities when it renegotiates its solid waste collection contract. Pocatello has also formed a committee to look at recycling. To encourage market development, the port of Lewiston is being discussed as a transfer point for sending recyclable materials to markets in Oregon and Washington. Some recycling is being done by the private sector and by community organizations and school groups.

Discussion about the future of recycling will center on the concept of providing Idahoans with an "Opportunity to Recycle" as outlined in H.B. 216. In that bill, local governments would have to provide, at a minimum, a place for collecting source-separated recyclables at the disposal site or a centrally-located facility. In a city of 4,000 people or more, a local government would provide for the collection of source-separated recyclables at least once a month; this would affect approximately thirty cities. Jurisdictions may develop alternate collection methods with approval from IDEQ. Communities would also have to provide public education on recycling programs. Significant opposition to the bill surfaced in the last legislature, and the fate of its conceptual framework for recycling is unclear.

Several observers noted that the independent nature of many Idahoans would preclude any laws requiring mandatory recycling, while others thought that mandating recycling was the only way to really give it a chance. Because of the rural nature of much of the state, they feel that recycling just will not happen unless people are told to do it. Consequently, the debate over recycling's role in solid waste management in Idaho is ongoing, and various ways are being discussed to enhance its use as a solid waste management tool in a difficult economic climate.

### Out-of-State Wastes Coming Into Idaho for Disposal

Because Idaho's solid waste regulations are not as stringent as those in Washington and Oregon, it costs less to dump solid waste legally in some parts of Idaho than in its neighboring states. An abundance of uninhabited government-owned land in Idaho is an easy target for illegal dumping as well. Though no figures are available on the overall amount or type of waste being transported and dumped legally or illegally in Idaho, many observers identified out-of-state tires and agricultural wastes as major areas of concern.

Tipping fees at many of Idaho's county landfills are low or non-existent, making it economically feasible for some out-of-state wastes to be hauled some distance and be legally disposed of in Idaho. Because of interstate commerce laws, this practice is difficult to regulate or curtail. By law, Idaho treats any waste deemed hazardous in another state as hazardous in Idaho. This does limit the amount of wastes that are brought to municipal solid waste landfills instead of to more expensive hazardous waste facilities in their home states. However, it has no impact on other solid wastes, particularly agricultural waste.

Additionally, illegal dumping occurs in Idaho on government-owned lands, as well as remote privately-owned land. With increasing costs of disposal in other parts of the region, observers are concerned that Idaho may be the recipient of more illegal dumping. In particular, some agricultural wastes are being brought into the state and illegally dumped. Improperly managed agricultural wastes can be damaging to the environment; onion and potato wastes, for instance, generate (explosive) methane gas and can cause groundwater contamination. Part of the recent activity to update Idaho's legal and technical requirements for solid waste management is attempting to prevent Idaho from becoming an obvious location for out-of-state wastes looking for inexpensive or illegal disposal sites.

## Idaho's Ability to Manage Change Hampered by Insufficient Planning Resources

Idaho is addressing a whole range of issues at the state and local level, as outlined in this profile. And, while the problem that small counties face in paying for the higher capital and operating costs for better solid waste management facilities has been noted, it is also important to note that, at all levels of Idaho government, there is a lack of staff resources to plan for, and manage, the solid waste changes underway. Planning requires technical studies, as well as consideration of legal and financing options. Efforts to promote regionalization involve public processes to examine siting and transportation issues. Working with other jurisdictions, including Indian tribes, requires time and effort. Counties served by private landfills, or hosting them, are faced with the challenge of insuring that public and private aspirations are compatible, a prospect that is becoming more complex and time consuming.

All of these up-front planning efforts require staff resources which are unavailable to most Idaho counties, in short supply at the Health Districts, and only slowly emerging at the state level. IDEQ has, like EPA, not been actively involved in municipal solid waste issues for many years, thus it has no reservoir of technical expertise with which to help the cities and counties. Given this paucity of staff resources, one observer noted that improving management at the landfills should be the state's first priority, and that reduction, recycling and incineration be pursued after the landfill questions are resolved, and as additional resources become available. Thus, one of the most significant challenges Idaho faces at all levels is how to enhance and expand its resources so as to improve its ability to make these decisions with such important long term consequences.

## Interview List for the Idaho Profile

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|---|---|---|
| Lois Bauer | Power County Commissioner | American Falls |
| Marla Carpenter | Blackfoot League of Women Voters | Blackfoot |
| Gwen Carter | Nez Perce Indian Tribe | Lapwai |
| Joan Cloonan | Idaho Assoc. of Commerce & Industry | Boise |
| Denton Darrington | Idaho State Senator | Declo |
| Ron Eggers | Bureau of Indian Affairs | Portland |
| Steve Erickson | Boise Cascade | Boise |
| Dale L. Geaudreu | North Central District Health Dept. | Lewiston |
| Rick Gillihan | Western Recycling | Boise |
| Jim Giuffre | North Central District Health Dept. | Lewiston |
| Frank Henderson | Kootenai County Commissioner | Coeur d'Alene |
| William Jarocki | Association of Idaho Cities | Boise |
| Nancy Johansen | Latah City Commissioner & ID Association of Counties | Moscow |
| Diane K. Johnson | Latah Sanitation | Moscow |
| Joe Johnson | Latah Sanitation | Moscow |
| Relene Johnson | Latah Sanitation | Moscow |
| Ray Latham | Nez Perce Indian Tribe | Lapwai |
| Ken Lustig | Panhandle District Health Dept. | Coeur d'Alene |
| Mary McGown | Boise League of Women Voters | Boise |
| Dave Neal | Ada County Solid Waste | Boise |
| Jim Oates | J. R. Simplot | Boise |
| Jack Palmer | Southeast District Health Dept. | Pocatello |
| Mike Penny | Nez Perce Water Resources | Lapwai |
| Rich Puckett | City of Lewiston | Lewiston |
| Dwayne Reed | Indian Health Service (Nez Perce) | Lapwai |
| Steve Rose | Southwest District Health Dept. | Nampa |
| Charles Saur | Sanitary Disposal Company | Lewiston |
| Jill Thomas-Jorgenson | Port of Lewiston | Lewiston |
| Robert Vander Boegh | Bannock County Solid Waste | Pocatello |
| Deanna Vickers | ID House of Representatives | Lewiston |
| Leonard Williams | Nez Perce County Commissioner & Chair Regional SWAC | Lewiston |
| Kim Yerxa | Kootenai County Solid Waste | Coeur d'Alene |
| Ted Zeigler | Indian Health Service Regional Office for ID/OR/WA | Portland |

## VII. OREGON PROFILE

### Preliminary Observations

We have identified seven major issues facing Oregon with respect to its management of municipal solid waste. These issues are briefly summarized below and then each issue is explored in greater detail.

1. METRO: Difficult Choices in Providing a Comprehensive Solid Waste System While the Portland metropolitan area has already dealt with many of the decision-making and system development issues that the rest of the state (and the Pacific Northwest) may eventually have to face, it is still not "home free" as it now faces the challenge of successfully implementing its programs.

Since the major landfill serving the metropolitan area is preparing to close, the Metropolitan Service District (METRO) is expected to begin sending waste to eastern Oregon in 1990, the first long-haul shipment of solid waste in the Pacific Northwest. METRO has also made a decision that no one company could provide more than one segment of this solid waste system. Consequently solid waste collection, transfer, shipping and disposal services will be provided by independent, private sector companies. This will have a major effect on how the private sector provides services and may result in higher costs in the short term, while preserving competition in the long-run. METRO is also moving ahead with composting yard waste and investing in an innovative process for composting municipal solid waste. Since this is a relatively new field, METRO is analyzing the types of standards to apply to compost and the development of markets for the ultimate product. METRO is also paying its transfer station contractor a fixed amount for "management" - whatever materials can be recycled save the contractor the cost of disposal and generates revenue at the same time. Thus, METRO will be involved with closing a major landfill, starting up long haul transport of its waste, and attempting to take a leadership role in MSW composting efforts - simultaneously. These activities, complicated by the lack of political control it has over solid waste collection, will test the organizational and political structure of METRO.

2. Emphasizing and Paying for Recycling Oregon has traditionally been a leader in recycling programs having had an "Opportunity to Recycle" law for five years and a "Bottle Bill" for seventeen years. However, as the market for recyclables becomes glutted, it will need to focus on developing markets and more public support for recycling. The many municipal recycling programs that have come on line recently have

flooded the markets with materials and driven prices down, creating the need for new and expanded market capacity. Current market price decreases have forced some areas in eastern Oregon to landfill some of their source-separated wastes. As the prices of recyclable materials decrease, local governments may have to consider taking on some of the risks of a volatile market. Recycling may not necessarily always "pay" for itself and local governments are now looking at ways to pay for the provision of these services as a routine part of solid waste management. How these services are provided - and how they are paid for - may be the focus of legislation introduced in the next session of the Oregon Legislature. A law providing some funding to support recycling programs was approved this year in an omnibus environmental bill, House Bill 3515.

3. Growing Focus on Special Waste Streams Significant attention in Oregon is being focused on how to handle special waste streams such as used tires, batteries, asbestos, contaminated soils from leaking underground storage tanks, household hazardous waste (HHW), conditionally-exempt small quantity generator (CESQG) wastes, and medical wastes. Some legislation is already in place regulating the use of waste tires and medical wastes. Special waste streams pose unique problems because they require additional or separate handling. Both the costs and the liabilities associated with handling these special streams are issues facing Oregon policymakers.

4. Planning for Solid Waste Disposal in Rural Areas The proposed Subtitle D regulations call for more stringent environmental controls than currently govern most landfills in Oregon. Higher costs associated with operating and maintaining a landfill under more stringent controls will cause many local landfills to close. This will greatly affect rural areas that serve a small population base. With limited resources, it will also be difficult for rural communities to plan for the alternate provision of solid waste collection and disposal services, which may involve the segregation of waste streams and hauling wastes long distances. Some counties may choose to use regional landfills, a decision which may result in intricate negotiations with the private sector. For those local areas which continue to manage their own waste, complex technical situations and the identification of the full costs of system development will pose difficult questions that require special technical assistance.

5. Movement of Intrastate and Interstate Wastes With two major landfills opening in Gilliam and Morrow counties in northcentral Oregon and a third in operation at Coffin Butte, one or more out-of-state jurisdictions may be sending their wastes to Oregon. As the two largest of these are not yet receiving wastes, the overall impact of the regional landfills, including waste transportation to the landfill, is yet to be felt. Nevertheless, at least one of the landfills is aggressively marketing its services outside

Oregon, and it is conceivable that wastes could be coming into the state from Washington and other surrounding states. Wastes will also be coming to the landfills from all over the state, including the Portland metropolitan area. In the past session, the legislature established a commission to look at various issues involving the importation of out-of state wastes, asking for a report of its findings by July 1990.

6. Industry Regulation in a Changing Environment Most of the solid waste collected in Oregon is done so under a franchise system - collection companies collect solid waste in a specified area under license to the city or county. Exceptions to this are Lane County, as well as the City of Portland and Multnomah County, where about 120 independent collection companies operate. Many observers feel that within the next few years the Portland area may also need to move toward a franchise system so that local governments will have more control over the collection of solid waste and recyclables. Landfills, on the other hand, are not subject to any economic regulation and are only regulated by the Oregon Department of Environmental Quality (DEQ). This leaves client jurisdictions (those exporting waste to these private landfills) reliant upon their contractual agreements alone to provide protections as to how and when future costs are passed on to them.

DEQ, in turn, faces the difficulty of applying operating standards equitably at large regional landfills and small rural ones - keeping the regulatory playing field level for all parties. At the same time, increased environmental protection measures will require more technical expertise at the state and local government level in order to provide adequate oversight and regulatory enforcement. This holds particularly true at the large regional landfills which will have significant legal, technical and financial resources to buttress their regulatory positions.

7. The State of Oregon: Key Role in Implementation Oregon's current solid waste management laws provide built-in flexibility to address the solid waste management challenges that it faces today, as DEQ is able to require standards that are as stringent as the proposed federal solid waste regulations. Because the state is being responsive to the need for more stringent environmental standards, it is already addressing many of the issues that will result from implementation of Subtitle D and the handling of an increasingly more segregated waste stream. The state overall, does not have a "capacity crisis", although some areas will be affected by landfill closures and may choose to take their wastes to regional landfills. And, Oregon has already moved well along on recycling collection. Thus, because many Oregon communities have taken the initial steps on the road to better solid waste management, it now faces the "nitty gritty" issues

of more planning and better enforcement as well as expanding the markets for recyclables.

First, the state must determine how best to assist local governments in planning solid waste management systems - some of which are rural with scarce financial resources, while others are urban, needing help nonetheless as they reshape their solid waste management systems. It must also determine how to balance the enforcement of regulations at major regional landfills with enforcement at smaller public and private landfills and, how to ensure effective enforcement, given the increasing technical complexity of solid waste regulations. And finally, it must determine how to encourage the development of markets for recyclable materials, and the proper management for source-separated special wastes such as tires, batteries and compost materials. Market development will pose a special challenge because unlike recycling collection, government is not in a position to mandate market development.

## METRO: Difficult Choices in Providing a Comprehensive Solid Waste System

METRO is a service district that encompasses most of Multnomah, Clackamas, and Washington counties, including the City of Portland. It is a governmental unit charged with providing various governmental services such as the operation of the zoo, coordinating public transportation planning, planning for land use, and providing a solid waste management system. The metropolitan area of Portland disposes of 1.3 million tons of garbage annually and METRO is responsible for its transportation and disposal. It has made three major decisions regarding its future solid waste management.

Landfill Closure & Long-Haul The St. John's landfill, METRO's major land disposal facility, will be reaching its permitted capacity and closing by early 1991; thus, METRO has been investigating other options. Because METRO was having difficulty in siting a landfill, the legislature directed DEQ to select a site. In addition to working with DEQ on landfill siting, METRO went out to bid for long-haul disposal alternatives. METRO chose the long-haul option after considering the costs, permitting difficulties, environmental concerns and timing constraints of both options. It is now under contract to a private landfill operator to take its wastes to a 2,000 acre landfill being built in Gilliam County. Wastes will be taken to a transfer station, loaded onto larger vehicles and then trucked through the Columbia Gorge to the landfill.

No Vertical Integration METRO has also decided that it does not want its solid waste system to be vertically integrated, hence, no one company can provide more than one major segment of the system's collection, transfer, or disposal. METRO believes that if one company provides all the services, there would be no competition in the overall system and the prices could rise significantly in the future. METRO also fears that collection companies or the transfer operator would have no incentive to recycle if they are affiliated with the landfill operator. METRO may be paying more for this fragmented system in the short term, in the hopes that it will preserve competition and keep the prices down in the long term.

Waste Reduction & Recycling Prodded by the legislature and the Oregon Environmental Quality Commission, METRO is also embarking on an aggressive waste reduction program, hoping to reduce its waste stream by about fifty percent once the program is fully in place. Estimates place the current waste reduction and recycling rate at about twenty-six percent and, when the transfer station opens, METRO hopes to recover another seven to twelve percent. While curbside recycling is available throughout the metropolitan area, some observers feel that the lack of a franchise system for collection companies in Portland and Multnomah County may hinder greater rates of recycling, as government has no leverage in deciding service levels and evaluating private sector performance. METRO also has an ambitious program of composting yard debris and MSW underway. It is currently analyzing what types of standards should be required for these materials and determining the marketability of its products.

In implementing all of the components of its comprehensive solid waste system, METRO will be tested on its ability to deliver. In the past, a lack of cooperation among the various jurisdictions and the lack of political control over the private sector solid waste and recyclables collection industry has made it difficult to implement programs, resulting in legislative and other state initiatives to focus METRO's attention on these issues. Many observers feel that METRO is now making progress on a number of fronts. However, because METRO has launched such a complex system with significant private sector involvement, administration of the program will require careful allocation of METRO's resources and will need the cooperation of all of METRO's political jurisdictions.

## Emphasizing and Paying for Recycling

With respect to recycling, Oregon faces two issues: how to solidify its past gains in recycling collection by working to develop markets for recyclable materials; and, how to provide for recycling services as market prices for key commodities fall, making recycling less economically attractive to private recyclers.

Oregon was the pioneer in establishing a mandatory deposit system for bottles and cans in 1972. Its "Bottle Bill" has proven to be an effective means to encourage the reuse and recycling of bottles and cans, even though recent attempts to expand this bill to cover wine coolers have failed as have efforts to increase the deposit to reflect inflation over the last 18 years. To capture other recyclable materials, the state adopted the "Opportunity to Recycle" law in 1983 that requires local governments to make recycling opportunities available to all of its citizens. In the sixty-nine communities with over 4,000 people, local governments must provide curbside collection of source-separated materials or collection through an acceptable alternative, at least once a month. Most of these are providing curbside collection with only a few offering an alternative means of collection. An additional thirty-five to forty smaller cities are also providing curbside collection of recyclables, though not required by law. The law also asks jurisdictions to make educational materials available to their citizens and to inform them of the locations where they might take their recyclable materials. Although the collection network for recyclable materials is now well established, little emphasis has been placed, to date, on developing markets for these materials.

Oregon does have several different programs offering tax credits for companies using recyclables as raw material in various production processes, but these programs have met with mixed success. Some argue that those companies disinclined to use secondary materials will not be swayed by tax incentive programs and those companies that can use recyclable materials will do so regardless of incentives. One notable facility that uses the tax incentive program is a paper mill that manufactures newsprint with a fifty percent recycled content. In addition, the facility uses chipped tires as a fuel additive in its kilns.

However, the firm is now being paid by California jurisdictions to take their newsprint, thus it is unlikely for the firm to turn around and buy newsprint from Oregon jurisdictions. The reality for Oregon is that this facility has become less a market for recyclables and more an alternate (albeit environmentally-better) disposal option. Since Oregon is located between the two more heavily populated states of Washington and California - where Los Angeles County alone has more people than the entire Pacific Northwest, it does not have the ability to control the markets. The actions of those states, and the supply of recyclable material they provide, will influence changes in the industry to a greater extent than any Oregon actions.

Government has - through its municipal recycling programs - greatly increased the supply of recyclables. The demand for these recyclables has not kept pace resulting in a glutted market for certain key recyclables. As the market has been falling, the state and local jurisdictions have been looking for ways to financially support recycling programs. In its past session, the legislature heavily debated a bill which would have imposed a two dollar per ton tipping fee on all solid waste deposited in landfills. This fee was intended to provide funds to counties for establishing and improving recycling programs and markets. The debate centered primarily on the method of collection and distribution of funds and the mandate to spend the money on recycling programs. The bill did not pass; however, the legislature did pass H.B. 3515 which imposes a fifty cent per ton permit fee to be collected from all landfill operators. DEQ may use these funds for HHW collection pilot programs; development of recycling programs; solid waste planning; groundwater monitoring; and, enforcement of groundwater protection standards at landfills.

Local governments may have to consider sharing some of the risks of recyclable market prices with the private sector which has been providing the services. Oregon's collection of recyclable materials is done largely by the private sector. With falling prices for recyclable materials, these services may have to be subsidized, or even paid for entirely by the public sector, if they are to continue. METRO is encouraging additional recycling at its transfer station by paying the cost of avoided disposal to the operator for every ton of materials that it is not disposed of in the landfill. The operator also keeps the recyclables for resale. Other local governments may have to consider some similar kind of compensation for the private recycling collection firms.

## Growing Focus on Special Waste Streams

In recent years, Oregonians have placed increasing emphasis on how to handle special wastes. Special wastes include materials such as asbestos, batteries, used tires, biomedical wastes, HHW, CESQG wastes, and oil-contaminated soils from leaking underground storage tanks. The legislature has passed laws recently governing the handling of used tires and medical (infectious) wastes. Until recently, most of these special wastes have been placed in landfills along with the rest of the municipal solid waste. Increasing environmental consciousness and an added emphasis on groundwater protection have induced the state to begin focusing on how it can better handle these wastes. Increasing segmentation of the waste stream, however, will continue to drive up the costs of handling these smaller individual waste streams. Oregon is currently facing a number of issues in the management of these wastes.

Asbestos Asbestos currently is taken to twenty-eight "regional" sites that are permitted to accept the material. At these sites, the asbestos is buried in designated cells under a daily cover of at least one foot, and the location of the asbestos in the landfill is recorded. However, once METRO's St. John landfill closes, a capacity shortage for asbestos may exist because the new Arlington facility is not now permitted to accept asbestos.

Tires Legislation was recently passed that is aimed at cleaning up all the old "tire piles" in the state and discouraging new ones; it created a one dollar fee on all new tires purchased in the state, with the money designated for a clean-up fund. To encourage reuse of used tires, a fifty percent tax credit is available to companies that use tires for energy recovery or in new products. However, only five companies have taken advantage of this so far, but DEQ hopes more firms will in the future.

Medical Wastes The legislature also enacted a bill that specifies how to handle medical wastes. H.B. 2865 provides guidelines for each type of medical waste such as the type of container that it can be disposed in and what the ultimate form of disposal may be. Currently, medical wastes are being landfilled in MSW landfills, shipped to Washington, or incinerated in the Marion County incinerator. A facility dedicated to the incineration of these wastes has recently been built in Worden, a town south of Klamath Falls. At this time, the facility will only accept medical wastes generated in Oregon.

Liability Special wastes present problems in getting them out of the waste stream and disposing of them in the least environmentally-damaging way. Liability for the organized transportation, collection, and reuse of these materials is likely to be a major obstacle to the development of systems to accomplish this. These issues may be addressed as DEQ studies options for handling CESQG waste in the Portland area and works with communities outside Portland on HHW collection days. As Oregon addresses the issues raised by special waste management, it is likely to provide a model for the Pacific Northwest, as it has already done with its "Opportunity to Recycle" legislation.

## Planning for Solid Waste Disposal in Rural Areas

Subtitle D requires all new MSW landfills, or lateral expansions, to have, among other things, liners and leachate collection systems. All new and existing landfills will also be required to have groundwater monitoring wells. Of the 100 current landfills in the state, five have liners, six have leachate collection systems, and fifteen have groundwater monitoring wells. Nineteen of these landfills in the state are expected to reach permitted capacity by the year 2000 and to close for that reason. Approximately one half of the permitted landfills in the state accept less than 1,000 tons of waste per year.

The state does not have a "capacity crisis" - there is adequate capacity for at least ten to fifteen years in most areas and three large regional landfills have been permitted. However, the smaller landfill operators will have to increase the levels of environmental protection in place at their landfills or close; it is expected that many operators will choose the latter.

The primary responsibility for providing solid waste services lies with the local government [ORS 459.017(b)]. DEQ provides technical assistance and guidance to the local governments in the planning, operation, and maintenance of solid waste systems. Once a county or city identifies in its solid waste management plan that landfill capacity is needed in its area, DEQ has the responsibility to provide technical assistance and guidance to any local government, upon request.

While Oregon is not as rural as some others states in the Pacific Northwest, 32 of its 36 counties have fewer than hundred people per square mile, and more than a third have fewer than 20,000 people. Thus, these counties face the task of evaluating their options as more stringent landfill controls are implemented.

Many local governments may well close their landfills and take their wastes to regional landfills. By statute, a regional landfill is defined as "a disposal site that receives, or a proposed disposal site that is designed to receive, more than 75,000 tons of solid waste a year from commercial collection companies from outside the immediate service area in which the disposal site is located." Three regional facilities have been permitted two on the south side of the Columbia River - in Gilliam and Morrow Counties and one in Benton County, which are likely to serve the needs of some rural counties as well as the urban centers.

Other areas may choose to come to an agreement with another county landfill. Tillamook County provides an example of this. Located on Oregon's coast, it receives over sixty inches of precipitation per year, which results in high landfill operating costs because of needed leachate control measures. When it knew it would have to close its landfill, it considered several alternate management options, including opening a new landfill or building a resource recovery facility. Ultimately, it decided that the least expensive alternative was sending its wastes ninety miles to Benton County. The agreement between the counties - a five year renewable contract - allows Benton County to assess how much capacity it has left each time the contract comes up for renewal, so that it can always guarantee its residents a thirty-year life at the landfill.

Whether several counties get together and site a landfill, or whether a county decides to send its waste to one of the commercial, regional landfills in northcentral Oregon, adequate planning is still required to ensure the proper handling of solid wastes. In most rural areas, the residents are responsible for bringing their trash either to the landfill or to drop boxes located throughout the county. Although a decision to send wastes to a regional landfill will probably not change the residents' means of disposal, the cost of handling solid waste will most likely increase - a cost which ultimately will be passed on to the consumer. Higher fees may trigger increased illegal dumping in rural areas. This is a practice that most local governments believe is increasing, and are trying to prevent.

Planning for the closure of its landfill and the transport of its wastes to a landfill outside the county is likely to strain most local governments' budgets. Using a regional landfill may also involve complex contract negotiations and logistical planning. It may be difficult for these local governments to conduct negotiations with large companies that have significant expertise. Not only will local governments have to arrange for transporting their wastes, but they will probably also have to ensure that some recycling program is in place since host counties (or states) are apt to place this requirement on exporting jurisdictions. These local governments may look to DEQ to help them, which would, in turn, put a demand on DEQ's resources and abilities.

## Movement of Intrastate and Interstate Wastes

With the opening of the major regional landfills in Gilliam and Morrow counties, Oregon may become the host to wastes generated in other states. At least one of the landfills is aggressively marketing its services to surrounding states. Wastes will also be coming to these landfills from all over the state, including the Portland metropolitan area. The importation of out-of-state wastes and transport of wastes generated in-state raises several issues concerning host state fees, transportation issues, and equivalence of recycling efforts.

While the Constitution prohibits interference with interstate commerce, the state is evaluating its options in response to growing public concern. Oregon's Solid Waste Commission, formed by the legislature in the past session, will be looking at issues of transportation; the waste reduction and recycling programs of the exporting states; impacts to the host communities from these regional sites; and, overall impacts to the state. It is difficult to determine at this time what the ultimate impacts these regional landfills will have on the state as no sites have begun accepting wastes. H.B. 3515 provides for a surcharge on all wastes generated out of state, to be charged as of January 1991; the Solid Waste Commission will act in an advisory capacity to the Environmental Quality Commission, which will set the rate, on this issue.

Medical wastes are also moving between states. Some wastes have been shipped to a medical waste incinerator in Bellingham, Washington. The Marion County incinerator also burns the medical wastes that are a part of its waste stream. A new medical waste incinerator has just been built in Worden, Oregon. This facility is capable of burning eleven tons of boxed or bagged medical wastes a day. It is only expected to accept wastes from Oregon, at least initially. Liability issues and resident opposition to importing out-of-state wastes (especially from California) have limited the scope of the facility's market area.

## Industry Regulation in a Changing Environment

Most collection companies in Oregon are regulated under a franchise system administered by counties and cities. Each county is responsible for dividing itself into franchise areas and awarding licenses for service areas to individual collection companies and regulating their rates. Franchises can be bought and sold. Counties retain the right to revoke the franchise of a collection company at any time should the level of service be unsatisfactory.

All but Lane and Multnomah counties (including the City of Portland) operate with a franchise system. In Portland and surrounding Multnomah County, about 120 individual collection companies still independently collect solid waste over the entire service area based on their individual accounts. The collection of recyclable materials is also handled under a franchise system. The collection company may be given the franchise to collect both solid waste and recyclable materials or the franchises may be awarded to separate entities. In the Portland area, the unregulated system of collection currently in place is proving to make collection of recyclable materials difficult. The system has improved somewhat, but over the next few years, the ability of the current system to collect recyclables will demonstrate whether some other approach to organizing recycling collection would provide better service.

Private disposal facilities, however, do not have any "economic" regulation; thus, any protections to client counties in terms of how future costs are passed along in their rates must come solely through contractual arrangements. (Economic regulatory issues surrounding these regional private landfills are discussed in more detail in the

Washington Profile.) Furthermore, these private disposal facilities will challenge the capability of the state's environmental regulatory apparatus. In Oregon, as in Alaska, the state issues permits for the operation and maintenance of the landfill, stipulating any special conditions and operating procedures. The large companies that operate the regional landfills have notable expertise and resources, challenging DEQ's ability to enforce its regulations. DEQ's staff and resources may or may not be able to match those abilities, especially over the long run as today's promise turns into tomorrow's performance. Additionally, DEQ is faced with regulating the smaller landfills, and it must balance the distribution of its resources.

## The State of Oregon: Key Role in Implementation

Because Oregon is well along in implementing more stringent landfill regulations, achieving widespread commitment to recycling collection, and handling its problematic waste streams separately, it faces the next order of business which includes issues in three areas.

First, many local governments are making the decision to close their landfills and perhaps transporting their wastes to distant regional landfills. How can DEQ effectively help counties plan for these transitions? Because most of the affected areas will be rural, they will be looking to DEQ for guidance and technical expertise. Urban counties, as well, will require DEQ help to plan for upgrading their landfills and provide comprehensive waste reduction programs. Many local governments may engage in complex negotiations to contract with private firms to handle their wastes and will need specialized assistance to do so in order to protect the public interest. Thus, DEQ will be confronting how to meet these needs, given ever present resource constraints.

Second, DEQ has required the most stringent environmental controls that it can at the private regional landfills, and the operators have pledged state-of-the-art facilities which go beyond regulatory compliance. Although the landfill operators have complied with all the requirements to date, it has taken a significant amount of DEQ staff time to review the permit applications, write the permits and oversee the installation of the controls during construction. How much time and effort can and will DEQ put into a "mere" local municipal landfill? Will DEQ have both sufficient numbers of staff as well as those with the needed technical skills to regulate an increasingly complex activity. And, will the same strict standards be required of all landfill operators?

Third, although the collection network for recyclable materials is well established in the state, market development has lagged behind. How can the state encourage the use of recycled materials - an area with relatively limited scope for government action.

As Oregon moves into a new era of solid waste management, DEQ will be faced with balancing all of these issues. Although planning and maintaining solid waste systems has traditionally been the responsibility of local governments, DEQ will likely play an increasingly important role in helping local governments as they implement and manage complex solid waste disposal systems.

## Interview List for the Oregon Profile

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| Bruce Bailey | Bend Garbage Company, Incorporated | Bend |
| Ron Cease | Oregon State Representative | Portland |
| Richard Daniels | Oregon Waste Systems | Portland |
| Larry Dauphinais | Indian Health Service | Warm Springs |
| Ron Eggers | Bureau of Indian Affairs | Portland |
| Steve Erickson | Boise Cascade | Boise, ID |
| Gordon Fultz | Association of Oregon Cities | Salem |
| Herb Grabel | Confederated Tribes of Warm Springs | Warm Springs |
| Bill Hutchison | Tooze, Marshall, et. al.<br>& Chair, OR Environmental Quality Commission | Portland |
| Ed Manion | Confederated Tribes of Warm Springs | Warm Springs |
| Bob Martin | METRO Solid Waste | Portland |
| Buck McCrone | Oregon Sanitary Service Institute | Salem |
| John Oshel | Tillamook County Public Works Dept. | Tillamook |
| Laura Pryor | Gilliam County Judge | Condon |
| Satish Purie | Confederated Tribes of Warm Springs | Warm Springs |
| Keith Read | Klamath County Solid Waste | Klamath Falls |
| Gary Rundell | Bureau of Land Management | Portland |
| Rod Schmall | Smurfit Newsprint Corporation | Oregon City |
| Jim Sears | Marion County Public Works | Salem |
| Bob Sigloh | United Disposal | Woodburn |
| Quincy Sugarman | OSPIRG | Portland |
| Bill Webber | Valley Landfills | Corvallis |
| Ted Zeigler | Indian Health Service | Portland |

## IX. WASHINGTON PROFILE

### Preliminary Observations

We have identified seven major issues facing Washington in its management of municipal solid waste. These issues are briefly summarized below and then each is explored in greater detail.

1. Full Range of Solid Waste Management Challenges Washington finds itself in the challenging position of responding to existing solid waste management concerns, while at the same time beginning to build the foundation of its future waste management practices. With the passage of Substitute House Bill 1671, also known as the "Waste Not Washington" bill, the state has embarked on a sweeping transformation of its approach to solid waste management - away from dealing with waste as a homogeneous entity and toward specific management (reduction, recycling, incineration and/or land disposal) for each of the components of the waste stream, based on a hierarchy of preferred management options. A full range of programs and market development initiatives are underway, and an ambitious planning schedule has been adopted which will force decisions on system development at the local level. This, coupled with Washington's Minimum Functional Standards (MFS) for landfill operations, launches Washington into a comprehensive revamping of its entire waste management system.

Even as this future unfolds, Washington must meet the interim challenge of managing today's solid waste concerns. Washington is home to the Pacific Northwest's most populous county and largest urban area, as well as numerous counties with small, scattered populations. As a result, policymakers are grappling with how to improve current solid waste management practices in rural counties with limited resources, as well as how to meet the immediate needs for environmentally-sound management of the large solid waste volumes generated by urban populations.

This ambitious program carries some risk. By attempting to move forward on so many fronts simultaneously, people and institutions at every level in both the public and private sectors may be consumed by the planning and coordination required. Without consistent focus on legislative priorities, Washington may fail to achieve discrete objectives. Important issues may be overlooked because they lack public appeal, are particularly complex, or have consequences which will not be seen for some time.

2. Importance of Location/Population on MSW Management Options The changing regulatory environment for solid waste management requires action by the counties, which are responsible for overall solid waste management planning, and also by the cities, to the extent that they manage their own solid wastes. These actions will, of necessity, vary by the size and location of the communities involved. Location has a significant impact on solid waste concerns - the wet areas west of the Cascades face the higher costs of managing landfill leachate while the dry counties east of the Cascades face higher costs of collecting and marketing recyclables. Counties in Washington form three general groupings: the urban counties west of the Cascades; the rural counties also on the west side; and finally, the rural counties on the east side. Spokane, the only major urban county on the east side, is an anomaly; its partial location above a sole source aquifer increases the consequences of groundwater contamination from land disposal.

3. How to Fulfill Commitment to Recycling Seattle, the state's largest city, is a national leader in the area of recycling as it attempts to reduce the amount of waste requiring disposal. The state is also committed to fostering curbside recycling opportunities in most communities. However, a philosophical commitment to recycling, and even a practical commitment to the collection of recyclables, is insufficient to actually achieve and sustain viable recycling. Even as governments have increasingly been mandating recycling, the private market for processing recyclables has not kept pace, causing sharp price declines in major commodities. These opposing trends set up four areas which the state will need to address as it fulfills its commitment to recycling:

- how to encourage the private sector to increase capacity to use recyclables as a production input and how to encourage both the public and private sectors to buy recycled goods;

- how to insure that collection of recyclables can be maintained even in the face of temporarily depressed markets, so that a steady supply of materials exists - a prerequisite for the expansion of recycling markets and to inculcate recycling as a "habit" on the part of the population;

- how to insure that governments throughout the state are adequately prepared to discuss and allocate the market risks which will inevitably be shared between the communities and the recycling industry; and,

- how to overcome the adverse impact of higher intrastate (versus interstate) trucking rates on the movement of recyclables to markets within Washington.

The state, through the market development and procurement initiatives mandated in H.B. 1671, is tackling the first of these issue areas. The remaining three issue areas are likely to become more important as smaller and more remote communities take active roles in recycling collection and marketing.

4. Waste Disposal in a State of Flux As cities and counties develop their disposal options, three issues are emerging: the role of incineration as part of the solid waste system; the need for overall system flexibility; and, how to implement "source-separated" disposal of special waste streams.

In spite of its place on the hierarchy, and EPA's clear acknowledgement in its Agenda for Action of incineration as part of the overall solid waste management system, the likely role of resource recovery facilities in Washington is unclear. Opponents of incineration have indicated that extensive recycling efforts and source-separation were prerequisites for their possible support of those facilities; with the passage of H.B. 1671 these factors are now in place. However, it still is not apparent what role incineration may play in the future.

Whereas the state's interest in how jurisdictions handle solid waste disposal has traditionally been limited to environmental regulation of disposal facilities, that may change as large private landfills are being proposed to meet the needs of various jurisdictions, including some of the largest ones in the state. If many local jurisdictions make the decision to send their wastes to these landfills, the state's solid waste disposal is centered around a few sites, reducing local options in the face of the unexpected - transportation disruptions, some natural disaster at a site, etc. Thus, it may become in the state's interest to protect the overall flexibility of the system by insuring that sufficient capacity of various types, both public and private, is available throughout Washington's counties.

Finally, the increasing disaggregation of the waste stream raises two concerns for solid waste management. First, some observers question if a disproportionate amount of attention and resources are being paid to removing some items from the waste stream, even as new operating standards for landfills have greatly reduced the risks associated with their disposal. Second, even as more and more segments of the waste stream are managed separately, the costs of maintaining a basic solid waste system are increasing. Under these circumstances, the issue is raised whether the high cost of segregating and managing household hazardous waste (HHW) and conditionally-exempt small quantity generator (CESQG) wastes should also be incorporated as part of MSW management or should be paid for in some other way.

5. Industry Regulation in a Changing Environment Current industry regulation raises two major concerns. First, current industry rate regulation focuses solely on the collection side of the industry, and does not regulate the proposed large private disposal options. The rising costs of compliance with regulatory requirements placed on landfill and incinerator operations will undoubtedly be passed on to the public through tipping fees; however, there is currently no oversight regarding how and when these costs are passed on to the consumer.

Second, enforcement of the Department of Ecology's (Ecology) regulations concerning landfill and incineration operation is handled by local county health departments. From past experiences where health department efforts at enforcement have been ignored for years by some local governments, it is doubtful that even the large local health departments have the sophistication, the personnel or the regulatory power necessary to enforce environmental regulations at the proposed regional landfills. It is inherently difficult for any agency to enforce environmental compliance at facilities such as landfills, sewage plants, etc. because of political pressure to keep costs down and because public health and safety may be further compromised if even a poor facility is closed. As well, the overall amount of environmental regulatory mandates for local governments is increasing, and not just for solid waste. This growth stretches local governments' compliance capabilities in the face of limited funding.

Compounding this problem, local health departments are funded by their counties, and, in turn, some counties will be funded by host county fees. It may be difficult to enforce regulations against what, for some health departments, will be the source of a large portion of their budgets. In addition, the counties shipping wastes to these sites have a compelling interest in keeping their costs down, and would not necessarily form a constituency for mandating environmental compliance, as those costs might then be passed on to the ratepayers (the counties themselves). Liability concerns may mitigate these forces to some extent; however, any liability as a "potentially responsible party" would not likely surface for decades which may make those concerns of less priority now.

6. Long Distance Movement of Solid Waste Just as the long-haul waste shipments to east side landfills may meet Seattle's solid waste disposal needs, these landfills will likely be offered as solutions to the problems of communities in other states. The implications of Washington perhaps becoming an importer of solid waste due to the marketing efforts of these in-state private landfills or being part of the export flow, to out-of-state private landfills, are being rigorously debated today. Apart from the philosophical question of whether the state wants to become an importer of waste, is the

concern that receiving waste from other regions will consume the state's capacity at a rate which will reduce future disposal options. While the Puget Sound area may be expected to fill these landfills in twenty to thirty years, adding wastes from other, larger cities would increase the rate at which these options are used up or would need to be expanded. In addition, trucking large volumes of wastes within the state to railheads or landfills may raise the ire of communities along the waste transportation route.

7. Pace of Change Creates Challenges in Coordination & Negotiation The state has mandated extensive planning and coordination on the part of its agencies, cities and counties. In addition, counties and cities are being thrust into a new context, involving them in complex negotiations to define their relationships with each other, and with the private sector, on recycling and the use of landfills. Recycling involves dealing with the private sector in allocating the risk of price fluctuations as well as the risk of no market at any price. Landfill negotiations will involve a wide variety of contingencies, including questions about how future costs of regulatory compliance will be reflected in tipping fees. Local governments could increasingly find themselves in negotiations with parties whose legal resources far outstrip their own, possibly creating uneven bargaining positions not in the public interest. These new demands on existing resources are likely to strain the system, increasing the importance of preventing duplication of efforts in task forces, consultant studies, contractual formats, accountability reviews, etc. as proper planning, coordination and decision-making occurs.

## Full Range of Solid Waste Management Challenges

Historically, Washington's citizens have taken an aggressive stand on environmental issues, including solid waste management. In 1984, the state passed the MFS for landfill operation, which are generally the equivalent of, and in some cases more stringent than, EPA's Subtitle D. Washington is currently considering additional regulations on the handling of municipal incinerator ash, and regulates as "hazardous" many wastes which would be managed as solid waste in other states.

With H.B. 1671, Washington is clearly attempting to institutionalize the process of separately managing each component of the waste stream, with as much material diverted from disposal facilities (either landfills or incinerators) as possible. This approach places the state on the cutting edge of public policy concerning solid waste management. The impetus for H.B. 1671 came from three sources: the increasing costs of solid waste management as a result of stiffer environmental regulation; the growing public awareness of environmental hazards and costs of past solid waste management practices; and public resistance to attempts at siting resource recovery facilities. The latter came as a surprise to policymakers because, according to the preferred management hierarchy in place at the time, resource recovery facilities were preferred to landfills.

H.B. 1671, in effect, distinguishes between source-separated and mixed waste. It is attempting to address every aspect of solid waste management technology and, over the next two to three years, push forward programs on a wide range of fronts in an effort to dramatically reduce the amount of "raw" or mixed waste being disposed. H.B. 1671 addresses what services are needed to move to source-separated management; who should provide those services; and how they should be funded. This also means that H.B. 1671 delineates, for the first time, the counties' role in recycling programs for unincorporated areas. It creates a committee on recycling markets and a task force on consumer goods packaging reduction. It mandates studies of the use of waste paper as a fuel source pending the development of additional paper recycling markets; product marketing for recycled tires; and management options for problem wastes such as waste oil, contaminated soils, etc.

As will be discussed in more detail in the context of other issues, various jurisdictions are also facing the full range of more immediate solid waste concerns - closing old landfills, opening new ones or securing access to regional facilities. These jurisdictions face significant challenges associated with MFS compliance.

As dealing with garbage will become increasingly more complex, it involves state and local governments in economic matters new to them. Localities will end up intimately involved in dealing with markets and monopolies. Far removed from the days of simple landfilling, recycling programs and other aspects of source-separated disposal require more intensive management than past solid waste practices and greater programmatic expertise.

Washington is clearly in the midst of a very dynamic period in solid waste management. As one county official noted, solid waste issues are moving much faster now than in the past, yet the risks are greater and so is the need to make correct decisions. He went on to say that planning is also more difficult as the solid waste stream is becoming increasingly fragmented, making it harder to project waste volumes and the costs of various management options.

## Importance of Location/Population on MSW Management Options

Even as the state legislature mandated policy initiatives to transform the way waste is managed in Washington, its thirty-nine counties are addressing the immediate concerns associated with day-to-day solid waste management. Because of differences in climate and population, the problems facing these counties vary. The counties can be roughly grouped into three categories: the large, urban counties west of the Cascades; the rural counties west of the Cascades; and, the rural counties east of the Cascades. Spokane is an anomaly in this matrix. While it is a large city on the east side with small amounts of rainfall, its management decisions are dictated less by climate than by its partial location over a sole source aquifer which increases the consequences of possible groundwater contamination from a landfill.

Urban/West King, Pierce, Snohomish, Kitsap and Clark (Vancouver, Washington) are the five largest counties west of the Cascades; they have a combined population of 2.5 million people - about 60 percent of the state's total. The issues they face run the gamut of solid waste management concerns: shrinking landfill capacity; increasing costs of landfill disposal; collapsing markets for recyclables (brought on in large part by the success of Seattle's and other cities' recycling collection programs); public reaction to the perceived environmental consequences of incineration and MSW incinerator ash disposal; and the environmental impact of past improper land disposal practices.

Seattle has closed its two landfills and, while aggressively promoting recycling, appears to have decided to ship its waste to a private landfill east of the Cascades, initially to Oregon. King County, with approximately twenty to thirty years of capacity remaining at current fill rates at its Cedar Hills facility, is trying to preserve that capacity through recycling programs. As capacity at its Cathcart landfill diminishes, Snohomish County has considered the full range of options, including contracting for private incineration capacity proposed for the Tulalip Indian Reservation and long-haul shipment of wastes. Clark County, in the Portland metropolitan area, is also investigating the long-haul option for its long-term solid waste management needs.

Tacoma is attempting to begin operations of a MSW incinerator, though it is meeting public opposition. In contrast to Seattle, Tacoma has resisted curbside recycling. Residents of the city of Tacoma pay no tipping fee at the city landfill, thus, they have no economic incentive to reduce waste volumes through recycling. In addition, Pierce County has been negotiating for the construction of a private incinerator. These negotiations are on hold pending approval of the County's solid waste management plan. As opposed to its neighboring communities in the Puget Sound, the emphasis in Pierce

County is on keeping the dollars associated with solid waste management circulating in the county through the use of local collection companies, local landfills or incinerators, and local recyclers.

The solid waste challenges facing these counties are driving much of the state's agenda: spurring waste reduction activities; encouraging market development for recyclables; increasing county control over the recycling activity and mandating source-separation as a prerequisite for incineration or land disposal. In addition, to the extent that the private sector meets the growing needs of these counties for future landfill capacity, the decisions made today by these counties will involve the state in new regulatory issues associated with the transportation of large volumes of waste, perhaps across state lines, and the increasing reliance on private sector disposal sites.

Smaller Western Counties The remaining fourteen counties on the west side vary from Thurston, with almost 146,000 people to Wahkiakum with 3,600. The larger counties are found along the I-5 corridor and the more sparsely populated ones are concentrated on the Olympic Peninsula.

The problems facing these counties vary with their size. The counties along the I-5 corridor generally have populations large enough to give them the option of managing wastes in local landfills, while complying with the MFS. One observer noted, however, that the process involved in siting or upgrading a landfill for a community of 150,000 (or less) requires the same effort - in terms of hearings, studies, monitoring wells, etc. - as for a community many times larger.

The situation is much different for the smaller, rural counties. The fixed costs associated with MFS compliance may require a larger population base than is found in these counties, implying that a regional solution might be considered or that their landfills might not comply with the regulations for an extended period of time. The cost of leachate control, in particular, is aggravated by the large amount of precipitation received on the Peninsula - over 100 inches a year, compared with 6 - 16 inches on the east side. Also, smaller counties may not have the resources to monitor existing landfills for environmental problems. Increased planning efforts have been mandated for cities and counties, yet these smaller counties may not have sufficient staff resources, nor are they likely to be able to afford the salaries to attract the staff necessary to prepare these plans. While the small counties are most in need of technical assistance grants, etc., it is hardest for them to spare the staff time necessary for lengthy grant application processes or simply to keep up with grant announcements in a timely way.

Eastern Counties Just over one million people live in the twenty counties found east of the Cascades, about one quarter of the state's population. Population is concentrated in relatively few counties - Spokane, Yakima and Benton account for about 60 percent of the people living east of the Cascades. The remaining 350,000 people are scattered over 17 counties - with county populations ranging from 2,500 to 53,100. All counties, except Spokane, have population densities which EPA classifies as rural (fewer than 100 people per square mile), and eight of these counties have fewer than 10 people per square mile.

Because it currently has four landfills which are Superfund sites and a portion of the county is located over a sole source aquifer, the City of Spokane has chosen to meet its future solid waste disposal needs through incineration. The remaining counties use land disposal.

Four of these east side counties - Adams, Klickitat, Yakima and Kittitas - are being courted as the sites of large, private landfills which would draw waste from the Puget Sound area and possibly from other states. Generally, these counties see landfills as economic development opportunities. To protect their interests, some counties are placing conditions on landfill siting, including levying host fees; insuring that the county bears no capital risk; restricting public access to the landfill; insuring that the private sector firm assumes all risk of closure, maintains a separate closure account and provides up-front performance bonds; and, requiring annual renewals of the health district permit. The long-term uncertainty surrounding these landfills is the ability of any of these counties to maintain the vigilance necessary to insure environmental compliance, for each of the key participants has interests which may weaken its commitment. Public sector customers have a clear interest in keeping disposal costs, hence garbage rates, low. The private sector landfill operator also wants to keep operating costs down in order to maximize profits. And, finally, the host county is interested in continued operations of the landfill so as to keep its economic benefits flowing.

As with the smaller west side counties, the remaining counties on the east side face the same problem of resources. In these counties, a public works director (also responsible for water and sewer, among other responsibilities), may not have the time or staff for analysis of solid waste options. Because of their proximity to the large private landfills, long-haul transport may prove an attractive option for some counties, enabling them to avoid committing to local facilities with high fixed costs. High fixed costs are particularly a problem if a county is losing population - and thus also losing potentially revenue-producing solid waste tonnage. This is the case with a number of Washington's rural counties.

On the other hand, these counties are farther away from the recycling markets in the Puget Sound and have less dense populations, making recycling collection and marketing more expensive. In eastern Washington, recycling is generally provided by the private sector and charitable organizations. Under H.B. 1671, it is likely that more of the communities on the east side will be prodded to provide curbside collection of recyclables. However, the east side cities have expressed concern about the risk of collecting recyclables for which there is no market. They are aware of the experience of some communities in eastern Oregon which, after incurring the cost and effort of collecting recyclables, were forced to landfill them for lack of markets.

As one observer noted, counties on the west side face three issues: insuring access to safe, convenient disposal capacity; increasing reliance on the viability of recycling; and repairing the damage of past disposal practices. Those on the east side do not face a "capacity crisis" as such, but focus more on the difficulties associated with the costs of recycling.

## How to Fulfill Commitment to Recycling

Given the combination of an environmentally-concerned populace and rising costs of land disposal, people in Washington are realizing that from now on recycling will be a fact of life. However, viable recycling is not a given, and Washington is facing the challenge of building a system which will support recycling as a long-term solid waste management option.

Market Development  As one observer noted, Washington has not seen a rush to recycling, but rather a rush away from disposal costs and the need to site disposal facilities. Only now, with the glut of paper, is attention being centered on the needs of the recycling industry. The fundamental problem with recycling markets is that most people buy a product for what it can do and at the lowest possible price, not for its "moral" content - i.e. whether it contains recycled material. Thus, some kind of market development, either through procurement requirements, capital facility investment incentives, or subsidy equivalency with virgin products, is necessary to give recycled markets a chance to survive and expand.
In terms of volume, the key markets in need of development are those for paper and compostables. According to Ecology's Best Management Practices Study, these waste

streams together account for over half of the residential solid waste and almost two-thirds of the commercial waste stream.[6] The other major recyclable products - aluminum, tin cans and glass bottles - currently have more stable markets. The market for plastics is growing, but is in its technological infancy.

H.B. 1671 creates a state-level marketing commission which will recommend ways to increase markets for various recyclables. It encourages local governments to give preference to the purchase of recycled goods. It creates a task force to investigate ways either to reduce packaging or increase its recyclability. It provides loans for communities to facilitate the construction of facilities to process or remanufacture recyclable goods, particularly mixed waste paper and tires. Many of these efforts are being launched under the auspices of Washington's Department of Trade and Economic Development.

Public Subsidy of Recycling Until recently, recycling has been caught in a Catch-22: without a guaranteed, long term supply there would be no expansion of facilities to process the materials, and without more facilities to buy the materials, there would be no market, no market price and hence no financial wherewithal to carry on a large-scale recycling program. Communities now recognize, however, that in addition to the value of the material, recycling also provides economic benefits in terms of longer landfill life and avoidance of disposal costs. In an effort to avoid disposal costs, government has begun to intervene in the market and pay for the collection of recyclables. Now, however, the (hopefully) short-term pitfalls of this approach are becoming evident. While government sponsored recycling provides the security of supply, it also overwhelms the short-term ability of the market to build facilities which use recyclable materials as a production input. In the process, this market price decline has hurt the private recycling industry and the volunteer/charitable collection sector.

For some small communities, with long-lived county-owned landfills, it is difficult to justify recycling on the basis of avoided costs. How should recycling be paid for? Including recycling costs in garbage rates raises the overall system cost. As garbage costs increase, people can increase recycling, look for cheaper legal alternatives, or dump illegally. The question particularly for smaller counties is, at what point will people resist paying higher and higher garbage costs? This reality will influence communities' decisions about the level of support they can afford to give to recycling.

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[6] Any development of the recycled paper market must recognize the role that paper manufacturers already play in recycling wood waste from timber operations. Substituting consumer waste paper for wood waste will not necessarily result in a net benefit in environmental protection, or natural resource conservation. Similarly, developing technology and markets for compostables will be necessary in order to achieve significant recycling potential for this waste stream.

Allocation of Market Risks As cities and counties negotiate contracts for the collection and marketing of recyclables, they will increasingly find themselves addressing the complex issue of allocating the risks of various participation rates and recyclable market prices between the municipal government and the recycler.

The experience of Seattle's recycling contractors illustrates the complexities of this problem. Both of the city's recycling contractors are paid for collection. One of the city's recycling contractors chose to assume all the risk of market price changes while the other shares the risk (and profits or losses) with the city. As long as the private sector is involved in recyclables collection, profit will be built into the negotiating process and allocation of market risks will be built into profit projections. Given the current plunge in paper prices, the one recycler who is bearing all market risk may be unlikely to repeat that type of contract provision in the future. The other Seattle recycling firm has been quoted in the press that it, too, sees problems with its financial arrangement.

As market prices fall, the possibility exists that processing facilities will be so glutted that recyclables cannot be given away. One community has proposed a contract, where even if no market could be found, the recycler would be contractually prevented from landfilling or incinerating the material. Contracts fostering permanent or semi-permanent "storage" of recyclables do not seem consistent with the intent of the state's various initiatives, and would likely involve environmental consequences of their own.

Stabilizing the markets for various goods will address this problem in part. However, risk will continue to be an issue as long as recycling is a part of solid waste management, and not all cities or counties have the legal expertise or knowledge of the various recycling markets to carefully allocate the risks of recycling programs.

Intrastate/Interstate Trucking Rates The Best Management Practices Study noted that one of the ways in which institutional support for recycling could be improved would be to have lower and more easily understood transportation tariff schedules. A number of observers noted that intrastate trucking rates are higher than interstate rates for the same or even longer distances. Since many categories of recyclables are sensitive to the cost of transportation to market, these higher costs may reduce the volume of recycling in some communities. To the extent that communities have to begin paying more and more of the cost of recycling collection and marketing, higher shipping costs may tip the economic balance in favor of not collecting some items at all and simply leaving them in the MSW stream destined for disposal.

## Waste Disposal in a State of Flux

There are three emerging issues concerning Washington's evolving methods of managing solid waste: the role of incineration in the state's management scheme; how to preserve operational flexibility as the overall number of disposal facilities decreases; and, how to handle the costs associated with handling special waste streams.

Role of Incineration As recently as 1985, Ecology reported that "it is expected that by the turn of the century, most of the waste that is not recycled will go through the material and/or energy recovery process." This was consistent with the state's hierarchy of management options at the time which placed reduction and recycling first and then energy recovery ahead of land disposal with no mention of source-separation. In part as a result of the controversies surrounding the siting of incinerators in the Puget Sound area and Spokane, the legislature revisited the hierarchy in the past session. In the new hierarchy, waste reduction and recycling retain their position as the first and second choice, respectively. Now, either incineration or landfill disposal of source-separated materials replace energy recovery as the third choice option. The lowest priority is given to mixed waste landfilling or incineration.

As noted earlier, a number of major jurisdictions are being driven by capacity concerns to reopen the issue of how solid waste management is best provided for their residents. Some are looking at the long-haul options provided by regional landfills sited east of the Cascades in Washington or Oregon. Some are also considering incineration, though both Seattle and King County have currently rejected that option.

Public officials involved in incineration projects in the state have expressed concern that, in spite of the position of resource recovery on the hierarchy, these projects have not received support either from Ecology or EPA in developing a regulatory framework that demonstrates to the public that incineration is a safe alternative to land disposal. Thus, the public concern over incineration has not received offsetting reassurances from regulators. Members of the environmental community, on the other hand, feel that the regulatory community has supported incineration. Another problem occurs when a private sector sponsor of incineration offers to build a facility to take all of a county's waste, and require bond covenants to that effect. This flow control sets up a disincentive to increased reliance on recycling or, depending on the success of the recycling efforts, may result in importing wastes into the county. In turn, this may create a political dilemma which complicates the acceptance of resource recovery as a management option. All of these officials noted the problem of having no regulations for MSW ash management; the cost differential of the two likely regulatory options for ash management - monofilling as a solid waste vs. disposal in a RCRA hazardous waste facility - considerably complicates planning for incineration capacity. As a result, it appears that, until the state and federal regulatory environment concerning MSW incineration and ash disposal is clarified, most jurisdictions favor and will continue to favor landfilling.

Flexibility Both EPA's Agenda for Action and the state hierarchy of management options imply an integrated systems approach to solid waste management. Communities are searching for the right mix of alternatives which are politically-acceptable and carry the least-cost. One result of this search for many of the larger Puget Sound communities has been an interest in long-haul disposal options.

However, increasing reliance on fewer facilities of the same type creates "pinch-points" making the state's overall solid waste management vulnerable to unexpected events such as:

- closure of a large regional landfill due to natural disaster, such as an earthquake or fire, either at the site or along transportation corridors;
- the need to close a facility because of failures in environmental compliance;
- unsatisfactory contract negotiations with the monopoly collection company (e.g. a railroad) or the landfill operator; or,
- in the case of an out-of-state landfill, where the receiving state places significant restrictions or fees on the use of the landfill.

In addition, without comparable public landfills in operation, there is no "check" on the costs that are being incurred by the private landfills. While Ecology has indicated that communities relying on out-of-state facilities must have an in-state back-up, that addresses only part of the flexibility problem, leaving important questions unanswered, such as who is responsible for the overall flexibility in Washington's system when several major communities rely on one (or a few) facilities. While some observers consider "disposal" as an interim solution until the full range of waste reduction, recycling and stream separation of special wastes (tires, batteries, HHW, etc.) come on line, disposal capacity is and will remain a critical element of the state's waste management system.
Special Wastes In addition, the solid waste management system is moving away from treating solid waste as a homogeneous commodity, and toward managing it as discrete

streams requiring separate forms of management. "Special wastes" are identified in Best Management Practices as waste tires, batteries, disposable diapers, waste oil, and polystyrene, among others. These complicate the solid waste management process in various ways. Their disposal may create operational problems for solid waste landfills and incinerators; cause environmental problems even though they are not regulated by state or federal law; or, preclude recycling due to the processes used in their manufacture.

Apart from the specific handling concerns (addressed in detail in Best Management Practices), some observers have raised two broader policy questions about the management of special wastes. First, given the new operating standards for landfills with all the protections they contain, the question has been raised whether concerns over certain waste streams, such as HHW, are overblown and whether these waste streams are given a disproportionate amount of management attention. Second, given the expense associated with HHW roundups and other such efforts, some observers noted that the MSW disposal system alone should not be expected to bear the full costs of properly handling these waste streams.

## Industry Regulation in a Changing Environment

The recent proposals by the private sector to build large, private landfills in eastern Washington will stress the regulatory system. Traditionally, most waste in the state has been deposited in city or county landfills, with any private landfills being relatively small and serving the needs of its host county. Currently, in Washington, there is economic regulation of the collection industry and environmental regulation of the disposal industry. Neither regulatory framework is structured to respond to the issues likely to arise in the future if the apparent trend toward greater reliance on private sector disposal options is realized.

Economic Regulation The solid waste industry is regulated under a system designed over 20 years ago in response to the problems of assuring garbage pick-up in unincorporated areas of counties. Currently, only the collection side of the industry is regulated. This form of regulation does not address solid waste issues such as increasing dependence on fewer private landfills; collection companies who also own landfills; and, compliance costs of landfills and incinerators which will be passed on to the public through tipping fees. While the host counties may exercise some authority over disposal facility rates, the interests of a host county may not be the same as the interests of the various counties using that landfill.

H.B. 1671 ensures that counties provide the Washington Utilities and Transportation Commission (WUTC) with information on the cost implications of county solid waste plans. This information is to be used in setting the rates for collection companies in the unincorporated areas. However, there appears to be no way in which the WUTC can incorporate likely future environmental costs into the rates being charged now. For instance, if a disposal facility knows that certain environmental costs will be incurred in the future, it has a choice of rolling that into the rate base now with a smaller increase and accumulating funds over a period of time, or waiting until a larger rate increase is actually "needed." It is not yet clear, though, how these choices will be made and conveyed to the public. Increases in rates should be done in a manner that does not send a rate "shock" through a community - a "shock" which may result in environmental compliance being held hostage to the desire to keep costs down (by the sending county and/or the WUTC). Complicating this process is concern that, with increasing industry concentration, rates will be bid up anyway through the variable cost provisions in the contracts once alternate public (and private) disposal facilities have closed down. In lieu of state regulation, it will be up to the host county, and the various contracting counties, to sort out the merit of rate increases as they arise.

Environmental Regulation To the extent that a shift from public to private disposal options occurs, a reevaluation of the environmental regulatory structure may be required. Responsibility for environmental compliance rests with Ecology and the local health departments. Ecology promulgates and enforces the rules and regulations governing the location, maintenance and operation of all solid waste disposal systems. County health departments are responsible for issuing permits for landfills and for ensuring that landfills are operating according to appropriate standards.

Past experience reveals a number of the problems in this arrangement. In some cases, the landfill manager may also be in charge of the health district. In all counties, the budget for the health district is provided by the county, setting up a difficult situation where the health officer is regulating the source of the health department's funding. From past experience with two of the largest jurisdictions in the Puget Sound, health departments may not provide the rigorous enforcement needed to protect the environment. In this case, health department efforts at enforcement were ignored for years by a local government, resulting in severe environmental consequences and a large financial liability. Furthermore, in its comments to EPA on Subtitle D, Ecology questioned whether health districts had the necessary technical expertise and the resources to administer the proposed regulations.

The key to the oversight of environmental compliance is independent and objective monitoring. The independence of a host county may be compromised to the extent it sees these facilities as economic development opportunities and becomes accustomed to the revenues associated with hosting such a facility. Furthermore, counties sending wastes to these facilities have an immediate interest in low disposal costs - making it less likely that they would be "environmental activists" regarding a distant regional landfill site, particularly as any liability problems as a "potentially responsible party" under CERCLA would arise far in the future and probably not within the election years of most local officials or within the careers of most local officials.

While H.B. 1671 allows Ecology to assume some enforcement roles, it can do so only with county permission. Because of a county's economic interest in the operation of a disposal facility, it may not care to turn over environmental regulatory power. Even the state may not be in a position to attract and retain regulators who are sufficiently knowledgeable to regulate these state-of-the-art facilities, facilities which are likely to have both significant technical and legal resources to support their regulatory positions.

## Long Distance Movement of Solid Waste

Just as the long-haul waste shipments to east side landfills may address Seattle's solid waste problem, these landfills may be offered as solutions to the problems of communities in other states. The implications of Washington becoming either an importer of solid waste due to the marketing efforts of these in-state private landfills, or becoming an exporter of solid waste to an out-of-state private landfill, are the subject of heated debates. Apart from the philosophical debate about whether the state wants to become an importer of waste, there is the concern that receiving waste from other areas will consume the state's capacity at a rate which will reduce future disposal options. While the Puget Sound may be expected to fill these landfills in twenty to thirty years, adding wastes from other large cities would increase the rate at which these options are used up or need to be expanded. Finally, trucking large volumes of wastes within the state to railheads or landfills may raise the ire of communities along transportation corridors.

Oregon's legislature recently mandated a study of the impact of receiving out-of-state wastes. Washington legislators, regulators and potential customers of Oregon landfills will be assessing the results of that effort.

## Pace of Change Creates Challenges in Coordination & Negotiation

The pace of change in solid waste management is likely to become an issue in and of itself. The rapid pace of change strains the ability of the counties and cities to take action because of their complex interrelationship with respect to the provision of solid waste services. It raises the prospect of immense duplication of effort - in studies, meetings, task forces and the like - which strains the capacity of the whole management system. And, growing interest in private sector disposal options and recycling activities creates a situation where counties and cities will be negotiating either with private sector parties who have far greater resources and sophistication or with other counties and cities in areas where they have little current expertise. Lack of legal resources or a lack of understanding of the economic complexities of these new arrangements may result in agreements that may ultimately prove unsatisfactory.

Cities and Counties The complexity of the interrelationships between city and county governments creates difficult planning problems. Counties have the responsibility to provide disposal facilities for their unincorporated areas, as well as for cities who choose not to exercise their full range of powers to manage solid waste. However, counties cannot operate collection services, which are provided by state-regulated franchise collection companies in the unincorporated areas. On the other hand, cities may choose to maintain and operate their own collection systems, or contract with a private collection company. (Approximately thirty-one cities operate their own landfills.) Cities, as part of their collection authority, can contract for curbside recycling collection. Counties were finally given this authority in H.B. 1671.

The efforts of King County and Seattle to plan for future solid waste management needs illustrates some of the problems facing cities and counties. Seattle currently accounts for 40 percent of the total county waste stream, and its decision, in 1992, whether or not to stay in the county system, will have profound implications for King County's system development. If it leaves (as now appears likely), a whole series of adjustments will need to be made by the city and the county, including, for example, reassessing the funding formula for the local health department.

In addition, cities and counties may perceive certain costs differently. When Seattle closed its landfills and started to use King County's, it began charging its residents a variable can rate for the amount of solid waste disposed. By recycling and composting, residents can minimize the amount of solid waste generated, and therefore keep their disposal costs down. By encouraging residents to minimize wastes, Seattle also benefits from the avoided costs of disposal at King County's landfill. On the other hand, King county operates its landfill, making the avoided costs associated with recycling less tangible. Lower disposal volume in the short-term increases fixed costs per unit disposed, even though reduced volumes extend landfill life.

The relationship between the cities and counties is further compounded by WUTC's role in regulating the activities of garbage collection companies in unincorporated areas. Given the existing structure of relationships, it is clear why goal setting and overall solid waste management strategies may be difficult to implement within some counties. As the evolution of solid waste management proceeds, the need for coordination will be greater, and will likely be required in many areas between counties as well as within them. In light of the current difficulties facing cities and counties, it is unclear how they will respond to the growing need for inter-county coordination in solid waste management.

Duplication of Effort The state has mandated extensive planning and coordination on the part of its agencies, as well as each of the counties and cities. The content of these plans is mandated by law, with the waste reduction and recycling element discussed in H.B 1671. That law also provides deadlines for Ecology's review of these plans.

Ecology is responsible for statewide solid waste management planning; establishing regulations and guidelines for the counties to use in preparing their solid waste management plans; and, providing technical assistance to the counties or cities in the development of their plans. Counties have overall planning responsibility in their jurisdiction. Cities may either opt to develop their own plans, work in cooperation with the county or with another city, or allow the county to develop a plan for them. A city's plan must be incorporated into a county's plan - though this does not mean that the city's plan must conform to the priorities of the county plan, as illustrated by the independent development of Seattle's plan. Cities and counties also may participate in solid waste management planning with more than one other city or county.

Given the extent of these planning efforts, a number of observers expressed concerns about "reinventing the wheel" - that counties with similar waste management situations may each embark on independent, expensive studies. This situation could arise, for example, as various counties address some of the issues outlined in this profile, such as learning how to allocate risk in recycling contracts.

In addition to the duplication of studies and planning elements, some observers expressed concern over the multiplicity of various marketing and recycling efforts underway. The state will have a marketing commission, and King County will have one as well. Some regional recycling effort may be initiated, perhaps under the auspices of the Western States Recycling Coalition. In addition, particularly in the paper industry, there are also on-going market development efforts at the national level. It has been noted that "the movers and shakers" are the same for all these efforts, and their time and effort may be fragmented in meeting the somewhat differing agendas of these various efforts. This is particularly evident in the recycling industry, where private recyclers are experiencing large demands on their time to educate cities and counties (and their consultants) about how recycling works.

Negotiating Position Finally, the changing environment thrusts counties and cities into complex negotiations, as they define their relationships with each other and with the private sector on recycling risks (e.g. price changes or no market at any price) and landfill risks (future costs of regulatory compliance). Increasingly, these local governments could find themselves in negotiations with parties whose legal resources far outstrip their own, possibly creating uneven bargaining positions not in the public interest. Complicating any negotiation will be some public pressure for finding a "quick and cheap" fix to solid waste management issues.

Washington is embarking on a wide variety of substantive changes in the way it manages its solid waste. Given the limited resources in many communities, the inherent complexity of the issues and the intricacies of working through the relationships found between key participants in the planning process, Washington's ability to achieve its substantive objectives will be influenced, in part, by the effectiveness of the processes that are created to achieve this rapid change.

## Interview List for the Washington Profile

| | | |
|---|---|---|
| Rick Anderson | Legislative Assistant to Rep. Art Sprenkle | Olympia |
| David Birks | Spokane Regional SW Disposal Project | Spokane |
| Jim Cameron | Tulalip Tribes | Marysville |
| George Civitanich | Washington Waste Management Association | Gig Harbor |
| Kathleen Collins | Washington Association of Cities | Olympia |
| David Dougherty | Washington State Business Assistance Center | Seattle |
| Dan Durig | Thurston County Public Works | Olympia |
| Steve Erickson | Boise Cascade | Boise, ID |
| Mike Ferro | Sierra Club | Seattle |
| Diana Gale | Seattle Solid Waste Utility | Seattle |
| Bryan Harrison | Pacific County Health Department | South Bend |
| Ray Hoffman | Washington Citizens for Recycling | Seattle |
| Robin Kordik | Pierce County Solid Waste | Tacoma |
| Don Kneass | Recycle America (Waste Management, Inc.) | Seattle |
| Lincoln Loehr | Northwest Pulp and Paper Association | Bellevue |
| Bill Lum | King County Solid Waste Division | Seattle |
| Pat Mummey | Spokane County Commissioner | Spokane |
| Gary Passmore | Colville Confederated Tribes | Nespelem |
| Nancy Pearson | League of Women Voters and Lobbyist, Washington Citizens for Recycling | Tacoma |
| Ed Rubatino | Rubatino Refuse Removal | Everett |
| Nancy Rust | Washington State Representative | Seattle |
| Randy Scott | Washington Association of Cities | Olympia |
| George Sidels | Washington State Recycling Association | Olympia |
| Barbara Skinner | Pierce County Commissioner | Tacoma |
| Jeffrey Showman | WA Utilities & Transportation Commission | Olympia |
| Art Sprenkle | Washington State Representative | Olympia |
| Elizabeth Tabbutt | Solid Waste Advisory Committee | Olympia |
| Jim Whiteside | Former Yakima County Commissioner & Washington Solid Waste Advisory Committee | Yakima |
| Phil Williams | Spokane Regional SW Disposal Project | Spokane |

## X. INDIAN TRIBAL CONCERNS IN SOLID WASTE MANAGEMENT

### Preliminary Observations

Approximately 26,500 Native Americans live on the thirty-one federally-recognized Indian Reservations in Alaska, Idaho, Oregon and Washington. These reservations vary in size. Some have less than 100 acres of land while the largest - the Yakima Reservation in southcentral Washington - covers over one million acres. In addition to the Indian population, approximately 62,800 non-Indians also live on these reservations. Eleven of these reservations have solid waste landfill facilities, while the rest use disposal facilities in neighboring jurisdictions. Generally, the reservations face the issues similar to those faced by rural areas throughout the region, as described in the state profiles. However, by federal treaty, these Indian Tribes are sovereign governments equal in stature to a state. As such, the environmental regulatory framework on Indian reservations is sufficiently different to warrant a separate discussion of the unique aspects of solid waste management on tribal lands. In all, we found four major solid waste management issues facing Indian tribes. Each is described briefly below and then is discussed in more detail.

1. Like other rural jurisdictions in the Pacific Northwest with small populations, Indian tribes which have their own disposal facilities face the problem of inadequate solid waste management facilities and insufficient staff or financial resources to upgrade the facilities to comply with Subtitle D. Those without their own disposal facilities must cope with rising costs - driven by higher costs for environmental compliance - for solid waste and disposal provided off reservation. In addition, a lack of information about the environmental effects of solid waste management, in general, detracts from tribal efforts at implementing recycling programs and waste reduction efforts.

2. The existence of Indian tribes as sovereign governments results in complicated relationships with neighboring counties, with state governments and with EPA. As all levels of government respond to the rising costs of solid waste management by looking to regional solutions, issues surrounding sovereignty may impact tribal efforts to be included in this planning framework.

3. In addition to EPA, various federal agencies - notably the Bureau of Indian Affairs (BIA) and the Indian Health Service (IHS) - assist Indian tribes with their public health and environmental concerns. Given tribal and federal resource constraints, the issue

facing federal agencies is how best to coordinate assistance to the tribes as they attempt to upgrade their solid waste management practices.

4. As the private sector moves more and more into solid waste management, large, sparsely populated Indian reservations are being approached by private companies as potential sites for MSW incinerators or landfills. Thus, the tribes must assess, realistically, the economic development benefits in light of the potential for environmental degradation at the reservation. The costs associated with monitoring such a facility, and the potential for opposition from neighboring jurisdictions if state and county environmental standards are more stringent than those applicable to facilities on tribal lands, are often significant issues that tribes face in considering this type of development.

## Indian Tribes Face Typical Rural Solid Waste Issues

Tribal governments in the Pacific Northwest face many of the same challenges that other rural governments face, as described in the profiles of Alaska, Idaho, Oregon and Washington and highlighted here. Of the thirty-one tribal reservations in the region, about eleven maintain, or have in the past maintained, one or more landfills on reservation land. These facilities serve about 25 percent of the population living on reservations in the Pacific Northwest - some 23,000 Indians and non-Indians. The remaining reservations use disposal facilities in adjoining jurisdictions. Collection is handled by a tribal firm, a private contractor or individual tribal members may access the landfills in an ad hoc, and usually free, way. Landfill operations may also be contracted to a private firm or operated by the tribe.

The low volumes of solid waste that are produced preclude the tribes from achieving significant economies of scale in either collection or disposal. While some reservation landfills meet current environmental standards, others are reported to be little more than open dumps. Four of the reservation landfills are found west of the Cascades; one of these facilities is essentially an open dump in an area which receives over 100 inches of rain a year. And, while that tribal government is currently trying to mitigate the environmental impacts, the landfill - of necessity - remains in operation.

Garbage services are often subsidized by the tribe, and tipping fees, if any, are low. Tipping fees create their own problems, since illegal dumping is a problem on reservations as in other rural areas. On some reservations, this illegal dumping is occurring at open dumps the tribes are trying to close.

Solid waste management on Indian reservations has not traditionally been a high priority. As in other rural jurisdictions, limited tribal resources generally are allocated for immediate concerns such as education and social services. To the extent staff and funds are available for environmental programs, drinking water quality and fish habitat issues generally take precedence over solid waste issues.

Subtitle D will require much greater environmental controls at MSW landfills. Even as the final regulations are being developed, it is likely that Indian reservations will be required to upgrade their solid waste management practices, as will the neighboring counties. Given the small volumes of waste generated on most reservations, implementing these new standards will place a large financial burden on the tribes. In addition, the lack of independent tax bases for the tribes, and the dearth of direct federal assistance for solid waste will constrain their ability to meet this burden.

Tribes that do not operate their own disposal facilities will also face the rising cost of collection and disposal, as their garbage rates increase to cover the costs of environmental compliance costs at the landfills they do use. Recycling offers little opportunity for many of these tribes to reduce their disposal volumes, because of the high unit cost of shipping small volumes of recyclables to market.

## Designation as a Sovereign Government Complicates Relationships

Federally-recognized Indian tribes are sovereign governments, created under treaty with the federal government at the time the tribes were given reservation status. In acknowledging them as independent governments, federal agencies agree to work with the tribes on a government-to-government basis. However, tribal sovereignty does not always translate into workable relationships with surrounding state and local governments. As the cost of environmental compliance increases, many tribes may want to be a part of regional solutions - either using existing facilities in surrounding counties or siting a regional facility on Indian lands. How the tribal governments are perceived by other local governments, and the working relationships that they can develop with local governments, will become more important as the need and desire for regional cooperation increases.

The 1975 Indian Self-Determination Act affirmed the federal government's commitment to recognizing an Indian Tribe as an independent government, equivalent to a state in its powers and responsibilities. In 1984, EPA issued its Indian policy that adopted this philosophy as it applied to the environmental programs under its administration. The

Clean Water Act, the Safe Drinking Water Act, and the Comprehensive Environmental Response, Compensation, and Liability Act have all been changed to incorporate this policy. RCRA, on the other hand, has not yet been amended to include similar language. Until the relationship of all parties to each other regarding solid waste management is clear, it creates an awkward situation for EPA, the tribes, the states and local jurisdictions. And while court cases and the final Subtitle D criteria may clarify the situation, this uncertainty creates a planning problem in the interim - an interim when many decisions are being made to change the way solid waste is to be managed in the Pacific Northwest.

In addition, one tribal observer noted that because tribes do not fit neatly into the "state operation" paradigm that governs most of EPA's assistance and regulatory activities, the needs of the tribes can often be overlooked. Thus, in spite of federal statements about Indian sovereignty, it appears as if the process of recognizing tribal sovereignty has yet to be fully implemented in this region. This process of recognition is also still occurring at the state level. For instance, Washington only recently signed an agreement with the tribal governments where it agrees to work with the tribes as equal, rather than subordinate, governments. This agreement was the result of years of contentious litigation over the limits of the state to regulate and enforce state policies on tribal lands.

Many tribal governments also have difficulties in dealing with the local governments surrounding the reservations. Over the years, some tribes have developed good working relationships with surrounding local governments, while other tribes have not. As the economics of environmentally-sound solid waste management dictate more regional facilities, the need grows for Indian tribes and their neighboring jurisdictions to plan jointly for recycling and disposal services - regardless of whether specific facilities might be sited on or off the reservation.

## Need to Coordinate Federal Assistance in Solid Waste Management

While tribal governments are responsible for providing solid waste services to Indians living on the reservation, technical assistance is available to them through IHS and BIA, as well as EPA. The Department of Housing and Urban Development (HUD) also plays a role in solid waste management to the extent that it must allocate funding for solid waste management for all new housing that it constructs on Indian lands.

In addition to providing technical assistance, BIA and IHS may also be held legally responsible for condoning open dumping on reservations, a practice prohibited by the RCRA. In February 1989, in Blue Legs v. U.S. EPA, the U.S. Court of Appeals upheld a ruling that held the Indian tribe, BIA and IHS responsible for the condition of the dumps operated by the tribe, and required them to jointly plan to bring these facilities in compliance with the current standards for landfills in RCRA. The financial capability of the tribe will be considered by the court in determining the tribe's share of these compliance costs. This ruling gives both BIA and IHS added incentive to work to upgrade current solid waste practices on tribal lands. However, just as tribal resources are strained, so are federal resources. And, Subtitle D compliance will require an even greater commitment of resources to solid waste management. Because the resource issue affects every level of government, it increases the importance of coordination among the various agencies charged with assisting tribes in these matters.

## Assessing the Economic Development Potential of Solid Waste

Some tribal governments may consider hosting regional solid waste facilities on Indian lands to stimulate economic development. Some of the reservations may have land that is well suited for environmentally-sound land disposal or have sites suitable for MSW incinerators.

In making such a decision, tribal governments must weigh the benefits and costs that a large facility would bring to the reservation. On the one hand, a solid waste landfill or resource recovery facility may bring employment opportunities for tribal members and host-fee income for the tribe. On the other hand, the tribes must weigh the possibility for environmental degradation (including truck traffic on rural roads, etc.), and the risk of pollution if environmental protection mechanisms fail. As well, the tribe must consider the costs and commitment required for effective monitoring of environmental compliance at such facilities. Furthermore, to the extent that a tribal site is perceived as a way to avoid more stringent state or local laws, siting a private facility on tribal lands may embroil a tribe in controversy with its neighboring jurisdictions - the same jurisdictions with which it is probably involved in a wide array of other issues. As with other rural jurisdictions, even this process of assessing the true costs and benefits from such proposed facilities is likely to require staff and technical resources beyond what is available to most tribes.

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## Interview List for Indian Tribal Concerns

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|---|---|---|
| Gwen Carter | Nez Perce Indian Tribe | Lapwai |
| Jim Cameron | Tulalip Tribes | Marysville |
| Steve Corp | Alaska Indian Health Service | Anchorage |
| Larry Dauphinais | Indian Health Service | Warm Springs |
| Ron Eggers | Bureau of Indian Affairs | Portland |
| Herb Grabel | Confederated Tribes of Warm Springs | Warm Springs |
| Ray Latham | Nez Perce Indian Tribe | Lapwai |
| Ed Manion | Confederated Tribes of Warm Springs | Warm Springs |
| Gary Passmore | Colville Confederated Tribes | Nespelem |
| Mike Penny | Nez Perce Water Resources | Lapwai |
| Satish Purie | Confederated Tribes of Warm Springs | Warm Springs |
| Dwayne Reed | Indian Health Service | Lapwai |
| Ted Zeigler | Indian Health Service<br>Regional Office for ID/OR/WA | Portland |